

Oct 3.

THE CONDOR

A Magazine of Western
Ornithology

Volume XXII September-October, 1920 Number 5



COOPER ORNITHOLOGICAL CLUB

THE CONDOR

A Magazine of Western Ornithology
Published Bi-Monthly by the Cooper Ornithological Club

Entered as second-class matter November 29, 1919, at the post-office at Berkeley,
California, under Act of Congress of March 3, 1879
Issued from the Office of THE CONDOR, Museum of Vertebrate Zoology, Berkeley, California

SUBSCRIPTION RATES

Two Dollars per Year in the United States, payable in advance.

Forty Cents the single copy.

Two Dollars and Twenty-five Cents per Year in all other countries in the International Postal Union.

COOPER CLUB DUES

Two Dollars per year for members residing in the United States.

Two Dollars and Twenty-five Cents in all other countries.

Manuscripts for publication, and Books and Papers for Review, should be sent to the Editor, J. GRINNELL, Museum of Vertebrate Zoology, University of California, Berkeley, California.

Claims for missing or imperfect numbers should be made of the Business Manager, as addressed below, within thirty days of date of issue.

Cooper Club Dues, Subscriptions to The Condor, and Exchanges, should be sent to the Business Manager.

For the Purchase of Back Volumes of The Condor or of the Pacific Coast Avifauna series, apply to the Business Manager.

W. LEE CHAMBERS, Business Manager, Eagle Rock, Los Angeles County, California.

Issued September 24, 1920

CONTENTS

| | | |
|--|------------------------|-----|
| The Pink-sided Junco | M. P. Skinner | 165 |
| The Function of Powder Downs in Herons (with two photos) | Alexander Wetmore | 168 |
| Notes on a Few Birds of the Grand Canyon, Arizona..... | Mellicent Humason Lee | 171 |
| New and Interesting Records of Pribilof Island Birds..... | G. Dallas Hanna | 173 |
| Notes on Some Birds of Interior Alaska..... | Lee Raymond Dice | 176 |
| FROM FIELD AND STUDY | | |
| Sunlight and Shadow | Chreswell J. Hunt | 186 |
| How Fast Can a Roadrunner Run?..... | Richard Hunt | 186 |
| Notes on Some Birds of Santa Cruz Island, California..... | Ralph Hoffmann | 187 |
| A Peculiar Flicker Habit..... | Luther Little | 188 |
| Authors' Names in the Second Condor Index..... | T. S. Palmer | 188 |
| Bryant Marsh Sparrow in the Hills..... | Harold H. Bailey | 188 |
| Blue-fronted Jay Nesting in Los Angeles, California..... | Mary Mann Miller | 188 |
| Domesticating California Birds (with one photo) | Carroll DeWilton Scott | 189 |
| Clark Nutcracker and White-winged Dove in Southern California..... | John C. Fortner | 190 |
| Interesting Records from the San Joaquin Valley Region..... | John G. Tyler | 190 |
| Nesting of the Blue-fronted Jay in South Pasadena..... | Luther Little | 190 |
| An Ovenbird on the Mohave Desert..... | Richard Hunt | 190 |
| EDITORIAL NOTES AND NEWS..... | | 191 |
| MINUTES OF COOPER CLUB MEETINGS..... | | 192 |



THE CONDOR

A Bi-Monthly Magazine of
Western Ornithology

Volume XXII

September-October 1920

Number 5

[Issued September 24, 1920]

THE PINK-SIDED JUNCO

By M. P. SKINNER

THE PINK-SIDED JUNCO (*Junco hyemalis mearnsi*) is the bird that is by far the most frequently met with in the forests of Yellowstone Park. Sometimes these Juncos are found where the trees stand thick and dark, but more often they are about the small openings that are scattered through the woods. Especially is this true of nesting sites, most that I have found having been situated in the open spaces. The Pink-sided Junco is pre-eminently a road-loving bird, being much more numerous along highways than in the unbroken forests; throughout a day's trip in summer these little birds are continually flying up from the road to the bordering pines. When they first come in the spring they frequent lower elevations, preferably the vicinity of scattered firs and cedars or at least brushy places. In summer they seek the Park plateau, up to the very tops of the highest mountains; late in September they have been found within a hundred feet of the summit of Mount Sheridan. They are found in the groves of white-bark pine (*Pinus albicaulis*) (on Mount Washburn and other high mountains) and limber pine (*Pinus flexilis*), in spruce and balsam, in fir and cedar, and at times in quaking asp, willows, birches, alders, and even sage brush. On the whole, the lodgepole forests seem the preferred habitat. On being alarmed they are quite apt to dart into some handy pile of brush. Juncos are seen on the beaches of the larger lakes, Yellowstone, Lewis and Shoshone, or in the alders along shore. During cold storms, they quickly find shelter under juniper shrubs, upturned tree roots, and over-hanging banks; or they come about barns and horses picketed in sheltered spots. Once I found them seeking night-roosts in lodgepole pines on a sheltered flat.

Frequenting, as they do, the Mammoth formation, especially early in the season, and being ground-loving birds anyway, it is not strange that they often seek shelter in the gas caves and fall victims there. Indeed, this species is the one that furnishes the most victims to the suffocating gas, and in former years large numbers were killed. A wire netting is now placed over the mouths of these caves and the destruction from this cause is much less. The Juncos are numerous about the geyser basins, but I do not think the hot water itself has any attraction for them; it may be that their food of vegetable and insect nature is stimulated thereby.

The Pink-sided Junco is our common breeding junco; others (as *montanus* and *connectens*) pass through on migration. Our Juncos are very quick, sprightly and restless in their ways, hopping about on the ground and keeping up an almost continual cheeping in loud tones, except when busy with parental duties or flitting through the pines with a flash of the white feathers in their tails. On the ground they move along with quick little jerks of the wings and tail at each hop. Sometimes they scuttle out of the road and under the nearby trees at one's approach. Usually, though, they are very tame and can be observed at close range, sometimes remaining unconcerned within ten feet of one. They even come hopping into our tents and they may stay for some time; at our camp at the Canyon, they were hopping contentedly about most of the time. They are quite fearless of the Red-tail and Swainson hawks, even when those big birds are screaming in the same tree within a few feet of them.

Pink-sided Juncos are very sociable little birds, associating in spring and fall with Mountain Chickadees, Nuthatches, Tree Sparrows, and with their cousins, the Intermediate Juncos, in the evergreens. At other times they may be seen with Pine Siskins, White-crowned Sparrows, Chipping Sparrows, Kinglets, Audubon Warblers and Townsend Solitaires. They are often with the Robins and Bluebirds, with Vesper Sparrows in spring on the sage flats, and even with Horned Larks and Leucostictes on the bare spots. In October they accompany many other species to the barns, for the oats that are dropped there. I have seen a Northern Shrike catch one or two during the spring before the shrikes go north. The Pink-sided Junco usually progresses by a series of short flights from tree to tree, or from bush to bush. The flight has a peculiar, halting catch to it, due, no doubt, to the short and fast moving wings.

These are enthusiastic little songsters from about April 14 to July 30, with the height of the song season about the first of May. They commence at an early hour, sometimes before 5 A. M. On cold, wet mornings they are the first species to start the chorus. The song is a tingling little warble uttered perhaps, from a quaking asp, eighteen feet or so from the ground, or from a lodgepole pine or a fir: *Ting'le, ting'le, ting'le*, rapidly repeated about six times. The singer perches like a song sparrow, with head thrown back and chest out, but keeping quite motionless. Rain does not stop their singing, but the songs go on as cheerily as ever. I have never observed them singing while in flight, but I have seen a bird begin singing just as soon as it alighted. They were singing at an altitude of 8500 feet on April 16, and at 8800 feet on June 11, where there was from one to three feet of snow all about. I have had them come about camp when I was cooking, especially in September and October, chirping most sociably. Such call-notes are usually low-pitched, but once at least, one came flying into a lodgepole pine under which I was packing, and made such a racket I thought it was a squirrel.

When the Juncos first arrive in the spring they appear at low elevations but soon move higher. Even so, they are often so early that they have to seek shelter about barns and other buildings. In March they are seen generally on the bare spots of ground under limber pines and Douglas firs. Sometimes they seek a roost under some convenient shed, and they even find their way into basements of houses, where they may be unable to find their way out again. The late storms of spring catch the Juncos, but they are adept at seeking shelter about the barns, under sheds, and in potato cellars; after the cold they are bright and lively, but not chirping much, and very busy hunting for possible

waste oats. At other times they take refuge in lodgepole pines under bunches of foliage covered by a canopy of snow, behind the snow caught on an overturned root, under firs, and even under sage bushes if nothing better offers. A little later a snow storm may drive them down from the mountains to the bare ground at lower levels. The middle of May finds these true mountaineers at 9000 feet altitude, and they are at timber line, 9500 feet, a month later. The first arrivals appear suddenly in March, and they gradually increase in number until June 1. A month later and until August 15, the number is increased again by the addition of young birds. Departure begins in September, with the bulk of the birds leaving between the 5th and the 30th. They are then in small flocks of four to eight birds; these small gatherings coalesce into flocks of sixty-five or more individuals in openings in the lodgepole forests where food is plentiful. Toward the end of September, those hardier birds that have still lingered move down to lower elevations about Tower Falls and Mammoth, and even into the sage-brush areas, although never far from the lowest firs and pines; and they may remain until the middle of October, or even November, before being driven out finally.

In the spring they pick up grain and weed seed on bare slopes, and come about barns with the Cassin Purple Finches for dropped oats, although they are more liable to do the latter in the fall. Once I noted a small group flitting about the top of a fir heavy with cones, but I thought they were catching insects rather than working on the cones. At one point near Mammoth there is a shallow stream of water trickling down from a hot spring above. Here the Juncos come to the little basins that catch this cooled water, to drink and bathe with Song Sparrows, Western Wood Pewees, and Rocky Mountain Nuthatches.

The Pink-sided Juncos begin pairing off early in May and by the 25th all are provided with partners. During this season, and also all through the summer, the male manages to show off his white tail feathers more, I believe, than at other seasons. Once I found a pair hopping about the roots of a half fallen, dead lodgepole pine on the bank of Cache Creek, as if looking for a nesting site, but I never had the chance to go back again to find out. On June 23 I found a nest, built of grasses and lined with finer material, placed seven feet from the ground on the back wall of a shallow formation cave at Mammoth, 6300 feet elevation. It held four buffy eggs blotched with brown. The mother was killed in a nearby gas vent soon after. On July 16, I found a nest beside the Grebe Lake trail, at 8000 feet altitude. It was under a little bunch of blueberries in the lodgepole forest, made of pine needles and vegetable stems, and contained four greenish eggs slightly speckled with brown. On the same day another nest was found on the edge of a rill of water just above Grebe Lake, at 8000 feet elevation. This was similar to the last described in every way except that this second nest was out in the open, under a tall cluster of lupines. On July 27 I found a nest under a tuft of partly dried grass on a low, dry meadow at 7700 feet altitude. It was well made of fine grasses and contained three greenish-white eggs marked with small brown spots, especially numerous at the larger end. The mother seemed timid and slow to return to her nest. The next morning I heard the male singing nearby.

On August 3, near Mariposa Lake at 8500 feet altitude, a female fluttered away, with pretended broken wing, from her nest in a hole in the ground under a bunch of lupines, about sixty feet from the nearest tree or shrub. The

hole was lined with vegetable fibers and contained three babies, just hatched and with eyes not yet opened. The next day I found them covered with a thin growth of long black down. The mother kept to the nest most of the time, but I observed the father hunting through the grass in the vicinity more than once. The babies remained in the nest about two weeks.

Young birds have been seen to fly as early as the end of June at the lower elevations; and as late as August 12 I have found them in the same stage at higher altitudes. I have not been able to determine whether the mountaineers are second broods or not. Regularly, as early as the middle of August, the Juncos are in small flocks.

Yellowstone Park, Wyoming, June 28, 1920.

THE FUNCTION OF POWDER DOWNS IN HERONS

By ALEXANDER WETMORE

WITH TWO PHOTOS

THE curious fluffy, greasy tracts of feathers found in patches on the breast and pelvic region in herons and occurring at random in various other groups of birds, even in the Passeriform order, have been the subject of considerable speculation and comment. Some time ago I had opportunity to study their development in the young of a few species of herons and from these observations was able to settle definitely their function so far as concerns this group of birds at least. Observations were made first while rearing a young Great Blue Heron (*Ardea h. treganzai*), and were checked and verified in the young of the Snowy Heron (*Egretta c. candidissima*), Black-crowned Night Heron (*Nycticorax n. naevius*), and Bittern (*Botaurus lentiginosus*). It is interesting to note that my findings verify a possible function of these tracts as suggested by Newton and Gadow (Dictionary of Birds, 1896, p. 654). In the young Great Blue Heron powder down tracts produced functional feathers soon after the contour and flight feathers had burst their sheaths and the bird began to preen and care for its plumage. The heron in question had been taken from the nest while still too young to know fear of man, and as I reared it by hand it became devoted to me, though fierce and truculent toward all others. As its plumage developed I noted that the bird constantly rubbed the bill in the powder downs, and on examination found that the heron was utilizing the greasy, powdery substance given off by the tracts to dress and oil the contour feathers. The bill was worked in among the powder downs until a small amount of the exuviae had gathered at the tips of the mandibles and then contour or wing feathers were pulled rapidly through the bill, anointing them with this oily substance. At once return was made to the powder downs after which other feathers were treated in turn until the whole of the body and wing plumage had been properly dressed. I had no difficulty in observing the process as, when permitted, the heron until practically grown delighted in standing upon my knee as I sat in a chair. I was able to place my fingers in

beside the tip of the bill, in the powder downs, to feel the mandibles gently nibbling at the downy feathers and then to see the bill withdrawn with its sides covered with the grayish powder. Following this I observed as it was passed over other feathers. This process was repeated daily whenever I cared to see it. At the same time I discovered by examination that the uropygial gland, the usual source of oil for feathers seemed undeveloped and remained in a non-functional condition until the heron was practically grown. The bird in early life paid no attention to this gland but worked in either pelvic or pectoral down patches. The actual development of the oil gland I did not observe as the heron at this stage became so vicious toward others that I was forced to discourage its tameness until finally it left the laboratory.

When attention was attracted to this peculiarity in the Great Blue Heron I took occasion to examine other young herons and found a similar condition existing in Snowy Herons, Black-crowned Night Herons and Bitterns. The accompanying illustration (fig. 36) shows well the relative size of the powder down tracts and the non-functional oil gland in a young Great Blue Heron

(*A. h. treganzai*) about two-thirds grown. The oil gland is the small rounded object at one side between the two pelvic tracts. In another cut (fig. 37) the young Great Blue Heron is shown securing the greasy material from the powder down patch on one side of the breast.

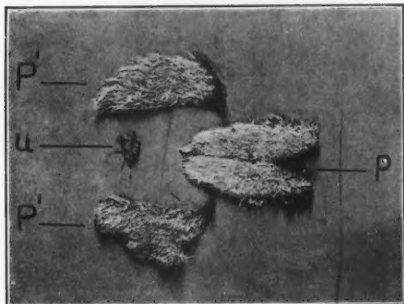


Fig. 36. POWDER DOWN PATCHES AND UROPYGIAL GLAND FROM GREAT BLUE HERON ABOUT TWO-THIRDS GROWN, DISSECTED FROM FRESH SPECIMEN TO SHOW RELATIVE SIZE. *P* PECTORAL POWDER DOWN TRACTS; *P'* PELVIC TRACTS; *U* DEVELOPING UROPYGIAL GLAND (NOT YET FUNCTIONAL).

Parenthetically I may add that although on various occasions I examined powder down tracts in living and in dead herons I was unable to observe that these tracts were luminous, in spite of numerous records on the part of others, to the contrary.

Since making these notes on powder downs it has been my inten-

tion to go farther into this subject and to study the development of these feathers and also of the oil gland. As a matter of fact powder downs are so little understood that ordinary definitions of them in text-books are vague and uncertain and their recognition in certain groups of birds is at times difficult. Where these downs are not segregated in definite tracts but are diffused through the pterylae it is possible, without careful attention, to confuse them with other feathers that have just begun to break their sheaths when in process of development. Similarity in function between powder downs and oil gland has suggested that these two organs may be homologous in origin. Should it prove that the powder down tract is a primitive arrangement from which the more complicated oil gland has developed then we may have a ready explanation for the occurrence of powder downs apparently at random in such diverse groups as Tinamous, the Whale-headed Stork, the Kagu, Sun Bittern, Mesite, herons and bitterns, the diurnal birds of prey (where they may be found in

many other species than currently recognized), parrots, Frogmouths, Potoos, Leptosoma and lastly in the Wood Swallows among the passerines. The structure of the oil gland with its numerous coiled tubes secreting fluid into a common chamber which in turn discharges the oil through one or many orifices



FIG. 37. IMMATURE GREAT BLUE HERON OILING MANDIBLES BY WORKING THEM IN POWDER DOWN PATCHES PREPARATORY TO PREENING CONTOUR FEATHERS.

to the surface might suggest an origin through the amalgamation of a number of separate tubes opening separately. All this, however, is pure hypothesis that may be verified or overthrown by careful study of the embryology of these structures.

Biological Survey, Washington, D. C., May 26, 1920.

NOTES ON A FEW BIRDS OF THE GRAND CANYON, ARIZONA

By MELICENT HUMASON LEE

IT IS six o'clock in the morning, daylight saving time, on the fourth day of June, in the Grand Canyon of Arizona. I am sitting under a red-bud tree near a little pool beside Bright Angel Trail, a short distance from the Indian Gardens. I am waiting for the hummingbirds to bathe in the dawn-cool water.

The ground is cold as a marble pavement. The abundant leaves of the red-bud bear too intense a shade for a pre-sunlit morning; the dense clusters of seedpods hang luxuriantly from the twigs. Across the path, at the base of the bank, the Indian paint brush glows between the softer-toned blossoms of the mallow, and the yellow plume of the Stanleya, to which the hummingbirds have not yet darted. In a dark, little niche, overhung by grape-vines, one beautiful, solitary thistle poppy blooms.

Suddenly, I hear a vibrant hum in the air, mingled with excited twitterings, and shrill squeaks. Buzz, buzz, buz-z-z over the willow tips, over the tules, over the graceful stems of the tall, waxy-flowered dogbane. Then, I catch the gleam of two little sprites of the air—Black-chinned Hummingbirds (*Archilochus alexandri*), chasing one another with miraculous speed. The combat ceases as abruptly as it commenced. The contestants separate. One retires to a grape-vine swing and sits there quietly, occasionally shaking his ridiculous tail feathers; the other descends to the pool. He dips his little breast into the shallow water; he rises into the air; he drops again by gentle stages, twirling around after each descent, and squeaking ominously; he dips again, and submerging his tiny body to the chin, he trails through the pool like a fiery ship of green and violet.

While he perches on a horizontal stem of dog-bane to dry his feathers, I gaze about me in quest of other birds. A male Black-headed Grosbeak (*Zamelodia melanocephala*) is softly singing on a willow bough which overhangs the pool, while his mate is surreptitiously collecting a bundle of fiber from a dried plant on the opposite bank. Dark shapes flit constantly about the latter, and, by the aid of my field-glasses, I can discern several pairs of Desert Sparrows (*Amphispiza bilineata deserticola*) apparently nesting in the cactus and other growth on the hillside. The Black-throats' song, strung upon three tones, is rather thin and wiry, but especially suited to their environment. Far above these little sparrows, almost at the foot of the massive wall of rock which towers beyond them, several wild burros, "escaped from cultivation", are leisurely grazing. Almost indistinguishable are they, in their coats of gray, from the boulders and brush amongst which they slowly move.

As I watch them, an insect-like trill floats to me from a ledge of rock, lower down the hill-side, and, by carefully focusing my glasses upon the spot. I can descry the Rock Wren (*Salpinctes obsoletus*), standing by a clump of cactus, and jerking her body up and down by what seems to be a well-managed system of wires. Very evidently, she is nesting in the fissure of rock, as she returns again and again to that particular spot, while her mate calls to her from some hidden point of vantage nearby. A rock squirrel runs along a ledge above her, sits up meditatively, drops again, and scampers into a crevice. And yet the sun has not risen behind me, over that austere barrier of rock. The air is still cold, and not a single lizard has stirred.

Suddenly, a big shape swings over the pool, and, directly before my eyes, a Cooper Hawk (*Accipiter cooperi*) perches on a willow bough. He twists his head in every direction, occasionally opening and snapping his beak; he suddenly wheels about, displaying his satiny back and the four dark bands of his tail feathers; then, he plunges into the tules.

But what is that long-continued song that never ceases—that song which has been so predominant that it has simply become a background for the intermittent calls of other birds? It is the jumble of the Long-tailed Chat (*Icteria virens longicauda*), whose yellow breast gleams through the willow thicket. For hours I have listened to this bird, in the mornings and evenings when I have lingered by this pool, and never have I detected a single strain the motif of which seemed to have been borrowed from the song of another bird. Mimic he may be at times, but in the early part of June, from dawn to dawn—for the voice of the chat continues throughout the night—he mimics none of his fellow birds: the rock wren, the desert sparrow, the grosbeak, and several other species, birds whose very characteristics are so dis-similar to his that their resultant musical expressions are in a category by themselves. Now the subject of my discussion flies to another willow, flies low, with a silent, hawk-like glide, which soon changes to a flapping, awkward motion, accompanied by a loud beating of wings. In the rare intervals which break his spun-out melody, I hear a cheerful little song behind me, which is so warbler-like in character, that without difficulty I can transport myself, by closing my eyes, to the cedar-spired hill slopes of New England, in the month of May. Rising, I skirt the pool, and enter an open area bordering the east side of the trail. A dense, luxuriant tangle of low willow and high dog-bane grows upon this mesa, which lies between the pool and the immense pale vermilion wall of granite over which scintillates the first faint glimmer of the sun. As well as I may, I advance through the thick, interwoven growth, the Chat following me, darting from willow to willow. Suddenly, I spy a tiny, dark gray bird, an atom of a bird, with miniature half-inch tail, clinging firmly to a slender dog-bane stalk, while near him hover the male and female Lazuli Bunting (*Passerina amoena*). I could pluck the little bird from the stem as easily as I could pick a plum, but instead, I quietly steal away, only too glad to discover that bird-nesting runs along as cozily and serenely in the Grand Canyon as in an old-fashioned garden.

I return to the pool just in time to see a pair of dainty little Arkansas Goldfinches (*Astragalinus psaltria*), drinking at the edge. These friendly birds do not object to my presence, but satisfy their thirst before flitting away. Scarcely have they flown, when I notice a female Black-chinned Hummingbird quivering before a loose flap of bark on a dead willow, and extricating from under the flap, threads of the inner fiber, a process which she repeats every three minutes, spinning away after each rapid task over a particular air-trail which probably leads to the recurved tip of a willow bough, on which a nest is in construction. Black-chins adapt themselves readily to their environment, and do not insist upon sycamore down for cradling their young, when sycamores are not available.

But now the sun has appeared over the red wall, the birds have retreated to cool coverts of willow and grape-vine, and only the irrepressible staccato ditty of the Chat permeates the silence of the glade.

El Cajon, California, April 10, 1920.

NEW AND INTERESTING RECORDS OF PRIBILOF ISLAND BIRDS

By G. DALLAS HANNA

DURING the summer season of 1919 not many new records of birds were secured on the Pribilof Islands. This was not due to any supposed scarcity of material from which the records could have been made, but was the result of a lack of opportunity to make any systematic observations or collections. On several occasions shore birds were noted which could not be identified with any previously recorded species, but a combination of circumstances in every case prevented the securing of specimens. On three separate days warblers were seen, and wagtails were observed once. In each of these groups there are excellent opportunities to secure new records both for the Islands and for North America. And this would add very materially to the knowledge of migration of many species.

Field identifications are not ordinarily believed to be trustworthy for records in this locality, where there is so much mixing of the American and Asiatic avifaunas. A firearm should be carried constantly by a person who expects to get any considerable number of the valuable specimens which appear. Unfortunately this cannot always be done. Although I have been instrumental in the recording of some thirty-eight species from the Islands for the first time, including six new to North America, I firmly believe that fully twice that number would have been secured had I been able to go about my regular duty "prepared" for birds.

These little Pribilof Islands, mere atoms in a storm swept sea, form the land home for myriads of birds. But in addition to this they are the resting place for migrants and wanderers from the entire northern part of the earth. Some most unexpected visitors have been found, as a casual inspection of the complete list will show. They have come from Alaska, Kamchatka, Siberia, Japan, and the northern part of Europe. Whether there is any law which governs these extensive wanderings or not can only be determined by continued and careful collecting, which no one thus far has been able to undertake.

Complete lists of the breeding birds of each of the five islands of the group are offered herewith for the first time. From this it is hoped changes which occur from year to year may be noted. Undoubtedly additions will come in the future; the islands are very young.

***Limnocryptes gallinula*.** European Jack-snipe. Some time during the spring of 1919, probably in April, a native on St. Paul Island secured one of these birds and very kindly kept the skin for me until my arrival. The identification was made by Mr. Joseph Mailliard of the California Academy of Sciences. This is a new record for the Pribilof Islands and for North America.

***Macrorhamphus griseus scolopaceus*.** Long-billed Dowitcher. A female was taken on St. Paul Island, September 18, 1919. It, the only one seen, was secured near the Salt Lagoon.

***Passerella iliaca unalaschcensis*.** Shumagin Fox Sparrow. On May 20, 1919, a female fox sparrow was found at North East Point, St. Paul Island, feeding among the piles of drift wood. Mr. Mailliard is responsible for the identification.

The above two species are here recorded for the first time from the Pribilof Islands.

The unsuccessful attempts to introduce the Northern Raven (*Corvus corax principalis*) on the Pribilof Islands prior to 1867 were recorded by Elliott many years ago (A Monograph of the Seal-Islands of Alaska: Special Bulletin 176, U. S. Commission of Fish and Fisheries, 1882, pp. 126, 128). His statement is as follows: "Failure to Introduce Ravens.—The Russians tried the experiment of bringing up from Sitka and Oonalashka a number of ravens as scavengers, a number of years ago, and when they were very uncleanly in the village, in contrast with the practice of the present hour; they reasoned that they would—these ill-omened birds—be invaluable as health officers; but the *Corvidae* invariably, sooner or later, and within a very short time, took the first wind-train back to the mainland or the Aleutian islands; yet the natives say that if the birds had been young ones instead of old fellows they would have remained" (page 126). On page 128 the species is given the number "6" in his list and it is further stated that the experiment was tried several times.

The species has not reappeared in any of the lists of the birds of the islands, since it had not at any time reached them of its own accord. During January, 1919, heavy ice surrounded St. Paul Island, but the natives were able to get out from shore in their boats in the open leads for the excellent duck shooting. On one of these occasions three ravens were seen near Sea Lion Rock. One was shot and wounded but could not be secured. It is not considered to be good policy to encumber literature with important records from the islands except when they are supported by actual specimens, but in this case identification could hardly be mistaken. The occurrence was confirmed by several reliable men to whom the species was well known when they were in Unalaska. So in this case it seems to be worth while to make the record without the specimen. The reason why ravens do not become established on the Pribilof Islands is one of the unsolved mysteries of Bering Sea. They live on St. Matthew Island to the north, the Aleutians to the south, Alaska to the east and Kamchatka to the west. Yet the Pribilofs are passed with their wonderful food supply in the shape of carcasses of fur seals. Can it be that the Islands are geologically too young?

Two Little Brown Cranes (*Grus canadensis*) were collected on St. Paul Island in May, 1919. This species occurs in small numbers regularly during migrations but the birds are rarely shot. The previous record was based on a single feather picked up on the tundra. The two birds secured had gormandised on maggots, picked up on the seal killing fields at North East Point.

A female Gadwall (*Chaulelasmus streperus*) was secured on St. Paul Island on May 20, 1919, from a flock of three at Half Way Point. It is the second occurrence of the species on the Islands.

An American Green-winged Teal (*Nettion carolinense*), male, was taken from a pair found May 26, 1919, near Lukanin Rookery. Also a male European Green-winged Teal (*Nettion crecca*) was taken on September 20, 1919. These records confirm the previous ones as to the regular occurrence of both species at this locality. It would be surprising if hybrids were not occasionally produced.

A female Polynesian Tattler (*Heteractitis brevipes*) was secured on St. Paul Island on September 17, 1919, near Kitovi Rookery. It makes the third specimen taken in North America. I had an opportunity to observe this bird

for awhile with two Wandering Tattlers in view at the time. The actions of the two species were practically the same. They feed very close to the sea on rocky shores and when disturbed fly lazily, rarely more than a hundred yards. The Wandering Tattlers on this occasion appeared perceptibly larger than the Polynesian, and the notes of the two were different. The latter uttered an irregular screech not of the same intensity or pitch, whereas the former gave its usual call, a series of six to ten individual notes uttered in the same pitch and rapid succession but each of shortening duration.

Pipits were seen and one, a female, was taken, on May 25, 1919. They were feeding on animal life about the beds of kelp which had washed ashore in the Village Cove. Until this time the species had only been seen during fall migration, but rather often then. The specimen collected appears to be the common *Anthus rubescens*.

A female Western Robin (*Planesticus migratorius propinquus*) was taken in the barn yard on St. Paul Island, September 15, 1919. I know of the occurrence of the species but twice previously. The first was observed in 1872. The specimens upon which the above records are based are deposited in the Museum of the California Academy of Sciences, San Francisco.

TABLE SHOWING THE BREEDING BIRDS OF THE SEVERAL ISLANDS
OF THE PRIBILOF GROUP

| | St. Paul Island | St. George Island | Otter ¹ Island | Walrus Island | Sea Lion Rock |
|--|--------------------|----------------------|------------------------------|------------------|------------------|
| <i>Lunda cirrhata</i> | + | + | + | + | + |
| <i>Fratercula corniculata</i> | + | + | + | + | + |
| <i>Phalaris psittacula</i> | + | + | + | + | + |
| <i>Æthia cristatella</i> | + | + | + | + | |
| <i>Æthia pusilla</i> | + | + | + | + | + |
| <i>Uria troille californica</i> | + | + | + | + | |
| <i>Uria lomvia arra</i> | + | + | + | + | + |
| <i>Rissa tridactyla pollicaris</i> | + | + | + | + | + |
| <i>Rissa brevirostris</i> | + | + | + | + | |
| <i>Larus hyperboreus</i> | | | | + | |
| <i>Larus glaucescens</i> | | + | | + | + |
| <i>Fulmarus rogersi</i> | + | + | + | | |
| <i>Phalacrocorax urile</i> | + | + | + | + | |
| <i>Anas platyrhynchos</i> | + | | | | |
| <i>Nettion [carolinense?]</i> | + | | | | |
| <i>Harelda hyemalis</i> | + | + | | | |
| <i>Phalaropus lobatus</i> | + | + | | | |
| <i>Arquatella maritima ptilocnemis</i> | + | + | | | |
| <i>Leucosticte griseonucha</i> | + | + | + | | |
| <i>Plectrophenax nivalis townsendi</i> | + | + | | | |
| <i>Calcarius lapponicus alascensis</i> | + | + | + | | |
| <i>Nannus alascensis</i> | | + | + | | |

¹I prefer to leave the question of the breeding of the Slaty-backed Gull on Otter Island open for future decision.

²Very rarely.

³In 1916, 1917 and 1918.

San Francisco, California, April 14, 1920.

NOTES ON SOME BIRDS OF INTERIOR ALASKA

By LEE RAYMOND DICE

185
WHILE serving as deputy warden in the Alaska Fisheries Service in 1911 and 1912 a small collection of birds was made in interior Alaska and a number of notes on distribution and habits secured. These notes are being published with the permission of the United States Bureau of Fisheries.

Most of the observations here recorded were taken in the vicinity of Fairbanks and of Tanana, and along the Kuskokwim River from the head of the North Fork to Bethel. A few records of specimens taken at Fairbanks by Chief Warden H. J. Christoffers are included. The specimens collected are preserved with the Biological Survey collection in the United States National Museum. Descriptions of the region and of the various vertebrate habitats in interior Alaska are being published in a separate paper (Dice, L. R., Univ. Mich., Mus. Zool., Occ. Papers, no. 85, 1920).

Thanks are due Dr. H. C. Oberholser for help in the identification of the specimens, and to Dr. Barton W. Evermann, then chief of the Alaska Fisheries Service, for his co-operation in the securing of the bird notes.

Colymbus holboellii. Holboell Grebe. A number were seen on a lake near Lake Minchumina, June 23, 1912, a half-grown individual was shot on the lower Takotna River August 2, and several adults were noted on the lakes of the Kuskokwim-Yukon portage near Kaltshak, September 1-4, at which time their weird calls were often heard at night. A specimen was taken by H. J. Christoffers at the mouth of the Salcha River, forty miles east of Fairbanks, October 11, 1911.

Gavia stellata. Red-throated Loon. Frequently seen in the spring of 1912 on the Kuskokwim River at the head of the North Fork; the first pair appeared May 21. July 8 one was noted on the North Fork near the junction with the East Fork. They were abundant on the lower Takotna River on July 17 and August 2. August 8 an adult and seven well-grown young were seen diving in the Kuskokwim near Napalmut.

Larus hyperboreus. Glaucous Gull. Common on river-bars along the Kuskokwim, from McGrath on July 16, to below Kaltshak on August 15, 1912. One was killed by prospectors in black spruces near the head of the North Fork, December 15, 1911, after a severe storm, but its occurrence in this habitat is apparently accidental.

Larus brachyrhynchus. Short-billed Gull. Common on river-bars and rare at lake borders along the North Fork of the Kuskokwim River from May 13 down nearly to the East Fork, July 7, 1912. A number were seen May 9 on Lake Minchumina.

Larus philadelphia. Bonaparte Gull. A large number were seen on the mud-bars about Lake Minchumina, May 9, 1912.

Sterna paradisaea. Arctic Tern. An individual in white juvenile plumage flying over the Kuskokwim near the mouth of Swift River, was collected August 7, 1912.

Anas platyrhynchos. Mallard. Common on the water and on the shores of lakes and streams of the Kuskokwim Valley from the head of the North Fork to Bethel. This was the first species of duck to arrive in the spring of 1912; at the head of the North Fork small flocks arrived April 22 at a time when the ice was still in the river and when there were only a few spots of open water. A female with eight newly hatched ducklings was seen in this locality on a small lake and in sedges on June 9. Females and young swimming in the North Fork above the McKinley Fork were noted June 29. A female with five large young was seen above the East Fork, July 8. Nearly grown young were observed on the Takotna River, July 31. Several were seen August 5 about fifty miles below the mouth of the Takotna River. August 13 to 30 young and old in large flocks were abundant on the equisetum-covered mud-bars of the Kuskokwim from a short distance below Aniak to Bethel. A few were noted on lakes and sloughs of the Kuskokwim-Yukon portage, September 1.

Mareca americana. Baldpate. One was seen in a lake near Lake Minchumina, May 9, 1912, swimming in the open water outside the ice.

Nettion carolinense. Green-winged Teal. A number were noted in pairs near the head of the North Fork of the Kuskokwim in the spring of 1912, being first observed on May 4. One was seen July 3 in a lake at the junction with the McKinley Fork. August 13 to 30 they were numerous in flocks on the lower Kuskokwim from a short distance below Aniak to Bethel. August 31 to September 2 they were found on the lakes and sloughs of the Kuskokwim-Yukon portage. On September 4 they were abundant in flocks on Talbiksok Creek near Russian Mission-on-the-Yukon. A specimen was taken August 23, 1911, at Fairbanks by C. J. Roach. They feed chiefly in sedges and equisetum along the shores of lakes, rivers, and sloughs, and frequently come out on mud-bars or gravel-bars to rest.

Dafila acuta. Pintail. Numerous in the spring of 1912 in lakes and sloughs near the head of the North Fork of the Kuskokwim, where they were first noted on May 13. August 13 to 30 they were abundant on the equisetum-covered mud-bars of the lower Kuskokwim from a short distance below Aniak to Bethel, occurring in large flocks associated with mallards. In August, 1911, a hunter shot a complete albino near Fairbanks.

Mareca, sp. Scaup. A pair of scaups were seen in a lake near the head of the North Fork of the Kuskokwim, June 9, 1912, but the species could not be determined.

Clangula clangula americana. Golden-eye. Common in the spring of 1912 in the lakes and streams near the head of the North Fork of the Kuskokwim. The first pair was seen May 7. No birds in male plumage were seen after June 1. June 20 to 30 groups of females and young were abundant on the North Fork down to the junction with the McKinley Fork, being especially numerous in sluggish parts of the stream. July 8 a few were seen above the junction with the East Fork. A female and four young not able to fly were seen August 15 in a slough below Kaltshak. Several adults were seen on the Kuskokwim-Yukon portage, August 31.

Charitonetta albeola. Bufflehead. The most abundant breeding duck of the lakes near the head of the North Fork of the Kuskokwim. The first pair for 1912 arrived April 28. Soon thereafter almost every small lake of the region had been pre-empted by a pair of these ducks, and on the larger lakes several pairs could be found. They were noted rarely on the river. On July 1 one was seen on the North Fork near the junction with the McKinley Fork, but none was found west of this point.

Usually the Buffleheads seemed to dwell in harmony with the other ducks, but on one occasion a male was seen to attack a seemingly peaceful male Pintail. They were often observed diving in the lakes for their food. The weight of a male averages about 16 ounces.

A male watched May 3 in a small lake spent a great deal of time cleaning himself, using his bill for the purpose. In reaching the feathers of the belly he had to lie almost on his back in the water. For cleaning the head and neck a foot was used while the bird floated on his side. During the whole process of cleaning the female floated unconcernedly alongside.

The Buffleheads are very trustful ducks and can usually be approached closely before they fly. When alarmed both sexes have the habit of repeatedly jerking the head forward, a motion that is quite independent of any action in swimming. When suddenly alarmed they usually dive rather than fly. As a rule they are silent; only on a few occasions were any calls heard. Once while driving a pair in front of a blind to take pictures, the male and female became separated. Then the male gave a squeaky call, which the female answered with a hoarse *quack, quack*, and the male immediately flew to her side. At another time a female alighted in an eddy of the river and gave a low call, *quk, quk, quk, quk, quk, quk, quk*, slowly, and the male in a few minutes appeared and alighted beside her.

Harelda hyemalis. Old-squaw. A few pairs were observed in lakes and sloughs near the head of the North Fork of the Kuskokwim during the spring of 1912. A male was seen first on May 27. The notes of a male heard while he was swimming in a slough were: a soft *kwaw*, a gurgling *kwaw-how*, and a loud explosive *kwaw kwaw how-wik*, with a sharp accent on the last syllable. The last call is sometimes varied by leaving off the first two syllables, making it merely *how-wik*. Several times in the

evenings of May and June a male was seen flying about over the river giving his wild cries.

Histrionicus histrionicus. Harlequin Duck. A male and two females were seen swimming in the North Fork of the Kuskokwim near its head on May 25, 1912. Later they crawled out on a gravel-bar and settled themselves for a rest.

Oidemia perspicillata. Surf Scoter. One pair was seen June 9, 1912, on a lake near the head of the North Fork of the Kuskokwim.

Anser albifrons gambeli. White-fronted Goose. Common on river-bars and at the margins of lakes along the Kuskokwim near the head of the North Fork. In 1912 they arrived in small flocks on April 29. A number were noted on Lake Minchumina May 9. Young were first seen June 27. Noted June 30 near the junction with the McKinley Fork. On August 7 a flock was seen near the mouth of Swift River. In August large flocks were found on the river-bars below Georgetown, and these flocks became larger and more numerous as Bethel was approached. On September 4 several large flocks were seen along Talbiksok Creek near Russian Mission-on-the-Yukon. Many flocks were seen along the lower Yukon near Kotlik on September 16. These are very noisy birds, constantly cackling and fighting among themselves.

Branta canadensis hutchinsi. Hutchins Goose. Numerous on river-bars and about lakes at the head of the North Fork of the Kuskokwim in the spring of 1912, but they were much less numerous than the White-fronted Geese. They first appeared April 30.

Olor columbianus. Whistling Swan. A flock of thirty swans was seen September 14, 1912, on a bare bar of the Yukon below Russian Mission.

Grus canadensis. Little Brown Crane. Cranes arrived in flocks at the head of the North Fork of the Kuskokwim on May 3, 1912, but were not seen after May 10. On August 18 they were numerous in large flocks along the Kuskokwim near Bethel.

Lobipes lobatus. Northern Phalarope. A specimen was secured May 23, 1912, from among sedges in the shallow water at the edge of a lake near the head of the North Fork of the Kuskokwim. Others were seen on the shores of a small lake June 6 and 9, and they were observed mating while they were swimming. One was seen on a small lake at the junction of the McKinley Fork on July 6.

Gallinago delicata. Wilson Snipe. Several were seen in a swamp near Fairbanks, August 18, 1911. One was noted in sedges on the shore of the Takotna River near Takotna Forks on July 18, 1912.

Pisobia minutilla. Least Sandpiper. A number were seen and one specimen taken on the gravelly shore of Lake Minchumina, June 23, 1912. Flocks of six to eight were common on the mud-bars along the Takotna River, July 20.

Totanus melanoleucus. Greater Yellow-legs. Several were seen singly on gravel-bars along the upper Takotna River in late July, 1912. A specimen was taken July 21.

Totanus flavipes. Yellow-legs. A pair were observed June 23, 1912, on the gravelly shore and in grass at the edge of Lake Minchumina. From their actions their nest must have been near, but it could not be found. One specimen was taken.

Helodromas solitarius cinnamoineus. Western Solitary Sandpiper. Common in May and June, 1912, at the borders of lakes and on river-bars from the head of the North Fork of the Kuskokwim down to the junction with the McKinley Fork. The first positive identification was on May 19. One specimen was taken. On June 17 a pair which evidently had a nest beside a small lake near the head of the North Fork became excited at my presence and flew about screaming and perched on nearby willows and even in the tops of the spruces.

Actitis macularia. Spotted Sandpiper. Numerous along the river shores at the head of the North Fork of the Kuskokwim. In 1912 sandpipers arrived on May 12 in flocks of four to ten birds, but positive identification of this species was not made until May 17. One specimen was taken. Many were seen below the junction with the McKinley Fork on July 6. On August 11 a nearly grown juvenile was collected from among driftwood on the shore of the Kuskokwim a short distance above Russian Mission.

Aegialitis semipalmata. Semipalmated Plover. A pair with a brood of young were seen July 7, 1912, on a sand-bar of the North Fork of the Kuskokwim a short distance below the McKinley Fork. On July 20 several were seen on gravel-bars of the Takotna River near Takotna.

Canachites canadensis osgoodi. Alaska Spruce Grouse. Local names: Chicken

or Spruce Hen. Common resident. Specimens were preserved from Fairbanks, Tanana, and from the head of the North Fork of the Kuskokwim; and they were noted also at Takotna, Akiak, and on the Kuskokwim-Yukon portage. They occur in white spruce-paper birch forest, in black spruce forest, in blueberry patches in the valleys, and in burned forests of white or black spruce. Many are killed for food by the natives and whites.

In the fall they are found in flocks and they become fat on the blueberries, cranberries, and other fruits of the region. Their winter food is the leaves and buds of the spruces. When in a tree and excited by some object the note *kwack, kwack*, may be given, and this is repeated more rapidly when about to take flight. However, they are usually entirely silent.

A hen taken May 7, 1912, near the head of the North Fork of the Kuskokwim contained an egg ready to be laid. On June 23 a female and a flock of eight or ten yellowish chicks just able to fly were seen at the Kuskokwim end of the Kuskokwim-Minchumina portage. This hen showed great distress at our proximity and scolded until all the chicks had hidden themselves. July 29 a flock of nearly grown young with an adult female were seen near Takotna.

Bonasa umbellus yukonensis. Yukon Ruffed Grouse. Local names: Willow Grouse, and rarely White-meated Grouse. Common in lowland willow thickets and in white spruce-birch forest; one was seen dusting itself on a dry river-bar. Noted at Tanana, Birches, Cosna River, Lake Minchumina, head of the North Fork of the Kuskokwim, mouth of the Takotna River, Takotna, and below Akiak. In winter their most important food is willow buds. At that time of year they often burrow into the snow for protection. March 10, 1912, two were flushed from snow tunnels among black spruces about fifty yards from the white spruce-paper birch forest along the North Fork of the Kuskokwim near its head. This was at 10 A. M. and their crops were filled with willow buds which must have been eaten that morning. The first drumming in 1912 at this locality was heard April 21.

A hen and a flock of young were seen near the head of the North Fork on June 8; and a deserted nest was found under a birch tree near the river bank on June 11. Another flock of very small young was seen June 14. A group of young about the size of quail was noted at the junction of the McKinley Fork, July 2. Well-grown young were seen July 29 near Takotna. A flock of half-grown young was seen below Akiak on August 11.

For the use of the name *Bonasa u. yukonensis* see Grinnell, Condor, 18, 1916, p. 166.

Lagopus lagopus lagopus. Willow Ptarmigan. Local names: Valley Ptarmigan and Tomican. At Tanana they spend the summer on the high bare hills north of the Yukon, but in the fall and winter after the snow has covered the ground they come lower and are found in open places, such as areas of nigger-heads, in the Yukon and Tanana Valleys in flocks of from three to two hundred birds. They may often be found in willows, especially where these are open and do not grow too tall, as in the dwarf willows above timber-line, and in winter they also visit the willows in the valleys. Patches of blueberries and dwarf birches, especially on the hills above timber-line, are a favorite habitat. Sometimes they may be found in open black spruce forest or among burned black spruces. Several flocks were seen on the Cosna River, February 17 and 18, and others near the head of the North Fork of the Kuskokwim on March 7.

A hen with a flock of young was seen in black spruce forest near Lake Minchumina, June 23, 1912. Young and old in large flocks were common in late August in the willows and on the partly bare bars of the Kuskokwim below Kaltshak, and on the tundra of the Kuskokwim-Yukon portage north of Kaltshak. Thousands in large flocks were seen in early September on the tundra along the Yukon below Andreafski.

On September 16 several in a partially exhausted condition alighted on board our steamboat off the mouth of the Yukon near Kotlik, when we were about a half-mile from shore. After leaving Nome, September 26, with an offshore wind a flock of six or seven flew on board the ocean steamer when the nearest land was at least fifty miles away. These birds were completely exhausted and could be easily picked up in the hand. At that time of year many ptarmigan must perish in Bering Sea.

The food in the fall, as found by stomach examinations, is almost entirely berries. In winter they feed principally on the buds of willow and dwarf birch.

During the winter the night and perhaps part of the day may be passed under the snow. The bird burrows down into the snow to a distance of about a foot and then makes a horizontal tunnel of from one to two feet in length, at the end of which he rests. In leaving the tunnel the bird rises directly through the snow and apparently very rarely or never follows the tunnel back to the entrance. The snow is so light that there is no difficulty in making the tunnel unless a crust has formed. Snow tunnels are not always used at night, for sometimes, especially if there is a crust, the birds roost directly on top of the snow in some protected hollow. In roosting the flock is scattered over a considerable space of ground; sometimes each bird is alone, or two or three may roost close together.

A flock in fall plumage was seen near Tanana, October 2, 1911. However, early October is a time of rapid change of color, for the birds of a flock seen October 7 were nearly white, having brown feathers only on the head, neck, and breast. October 22 a flock in full winter plumage was seen. The change in color was coincident with the coming of the snow and its increase in depth. No Willow Ptarmigan were seen in the late spring of 1912 until May 9, when one in brown and white spring plumage was seen at Lake Minchumina.

During the winter they were often heard to give the note *kuk*, repeated slowly when suspicious or rapidly when taking flight and sometimes continued while flying. However, they usually fly silently.

Lagopus rupestris rupestris. Rock Ptarmigan. Also called Mountain Ptarmigan or Tomican. Numerous near Tanana, at the head of the North Fork of the Kuskokwim, Mount Sischu, and near Takotna, on high hills. They are found among rocks, on sphagnum-covered high ridges, in blueberries and dwarf birches, in willows and alders above timber-line, and in open scrub black spruce forest. A flock of five in winter plumage was noted March 5, 1912, in open scrub willows in the Kuskokwim valley near the head of the North Fork. A specimen secured from this flock had the crop filled with willow buds. Specimens were also taken near Tanana and on Mount Sischu.

The beginning of the change from winter to spring plumage takes place about April 1. On April 13, 1912, a number of birds observed on the ridges at the head of the North Fork of the Kuskokwim had the necks colored a rich brown. On June 5 several flocks seen near the summit of Mount Sischu were not yet in full summer plumage. However, among the snow and bare rocks of that situation it was very difficult to see the birds until they flew. These flocks were seemingly composed entirely of males and were found only on the high wind-swept ridges and on the rocky summit. The white plumage of the under parts of most of these was much discolored from their habit of dusting themselves in the clay of wash deposits on the hillsides.

Pediceetes phasianellus phasianellus. Sharp-tailed Grouse. Local name: Pin-tail Grouse. Numerous in small to large flocks in the Tanana and Yukon valleys near Tanana in the fall and winter of 1911-1912; noted at the head of the North Fork of the Kuskokwim on March 25 and April 14, 1912. Specimens were secured at both of these localities, and by H. J. Christoffers at Fairbanks. They were found among tamaracks, in black spruce forest, and in patches of blueberries and dwarf birches. As shown by stomach examinations they feed extensively during the winter on the buds of dwarf birches. Hunters claim that this species has only within the last few years appeared in these regions, never having previously been found so far west.

Astur atricapillus atricapillus. Goshawk. The skin of a goshawk was seen in an Indian cabin at Coskakot in March, 1912. The bird was said to have been killed near that place in the summer of 1911.

Buteo swainsoni. Swainson Hawk. One very melanistic specimen was taken June 4, 1912, in burned timber on the slopes of Mount Sischu.

Archibuteo lagopus sancti-johannis. Rough-legged Hawk. Numerous about the equisetum-covered mud-bars and willow-bars of the Kuskokwim River near Bethel in August, 1912. One specimen taken August 19, contained the bodies of four young shrews. Although ducks and ptarmigan were abundant on these bars they showed no fear of the hawks.

Aquila chrysaetos. Golden Eagle. One was seen August 2, 1911, near the Tanana River above Fairbanks, and another May 18, 1912, near the head of the North Fork of the Kuskokwim, both in white spruce timber.

Falco peregrinus anatum. Duck Hawk. A nest was found July 4, 1912, on a rocky crag near the junction of the McKinley Fork with the North Fork of the Kuskokwim. The nest was only a slight depression in the moss of a narrow ledge and contained four small nestlings covered with yellowish down.

Falco columbarius columbarius. Pigeon Hawk. Small hawks, almost certainly of this species, were seen many times along the Kuskokwim River, and were especially abundant in August, 1912, along the bluffs overlooking the river below Georgetown. We were unable to secure a specimen.

Pandion haliaetus carolinensis. Osprey. Common June 22 to July 7, 1912, along the North Fork of the Kuskokwim from the head to the junction with the East Fork. Several nests were seen June 22 in the tops of high white spruces overlooking the river near the Minchumina portage.

Scotlaptex nebulosa nebulosa. Great Gray Owl. The dried body of a great gray owl was seen on the roof of a cabin at the junction of the McKinley Fork with the North Fork of the Kuskokwim.

Bubo virginianus lagophonus. Northwestern Horned Owl. Often heard hooting at night in the white spruce forest along the Tanana River near Fairbanks, along the Cosna River, and at the head of the North Fork of the Kuskokwim. From June 25 to July 7 family groups were common in willows at the edge of the white spruce forests along the North Fork down to some distance below the junction with the McKinley Fork. These groups usually consisted of three frowsy young, with one or both old birds somewhere nearby. A few times only two young were noted in a group. One specimen was taken near the Minchumina portage, and one at Fairbanks by H. J. Christoffers. For the use of the name *Bubo v. lagophonus* see Oberholser, Proc. U. S. Nat. Mus., 27, 1904, p. 185.

Surnia ulula caparoch. Hawk Owl. Local name: Ptarmigan Hawk. Common near Tanana in the fall and winter of 1911, being first noted on October 6. Several were noted on the Cosna River, February 18. Numerous at the head of the North Fork of the Kuskokwim in the spring of 1912. Several were seen September 1, 1912, on the Kuskokwim-Yukon portage. They occur in white spruce forest, in black spruce forest, and in burned forest. In winter they were noted hunting over areas of blueberries and dwarf birch, and over the open treeless ridges.

A nest containing five slightly incubated eggs was found May 3, 1912, in white spruce-paper birch forest near Lake Minchumina. The nest was hollowed out of the rotten wood in the top of an Alaska paper birch stub about fifteen feet high, and the bark remaining in place formed the sides of the nest. A few leaves had fallen into the nest, but no other material had been added. The male made angry dashes at us as we cut down the stub, though the female merely looked fierce. Several times when we retired a short distance she returned to the nest and resumed incubation. On June 26 a young Hawk Owl just able to fly was seen in company with a parent at the edge of the forest along the North Fork of the Kuskokwim below the Minchumina portage.

Notes and calls are numerous and quite varied, but all seem quite musical. *Kr-r-r-e-e-e-e-p*, a low rapid rattle rising to a cry is often heard. *Wur-a-wur-a* (rapid) and *kuk-a-wuk* (very low) were given by a male on March 25 while he was seated in a dead spruce.

Streptoceryle alcyon caurina. Western Belted Kingfisher. One was seen over a slough near Fairbanks, August 19, 1911. They were numerous at the head of the North Fork of the Kuskokwim in 1912, appearing first on May 21. On July 7 one was seen to fly from a nest-hole in the river bank below the entrance of the McKinley Fork. They often perch on birches or white spruces overlooking the river. Several were seen on the Takotna River July 20. For the use of the name *Streptoceryle a. caurina* see Ridgway, U. S. Nat. Mus., Bull. 50, pt. 6, 1914, p. 420.

Dryobates pubescens nelsoni. Northern Downy Woodpecker. One was seen in burned black spruce timber ten miles north of Tanana, September 22, 1911.

Dryobates villosus septentrionalis. Northern Hairy Woodpecker. A specimen was obtained August 5, 1911, in white spruce timber along the Tanana River, nine miles east of Fairbanks.

Picoides arcticus. Arctic Three-toed Woodpecker. A specimen was taken by H. J. Christoffers about eight miles east of Fairbanks, September 18, 1911.

Picoides americanus fasciatus. Alaskan Three-toed Woodpecker. A common resident in white spruce forests near Tanana, Fairbanks, and at the head of the North Fork of the Kuskokwim. A few were noted in burned black spruce. Specimens were preserved from the latter locality and from the Cosna River. An old bird accompanied by one young was seen July 4, 1912, at the junction of the McKinley Fork with the North Fork. The two were on a spruce tree, and the parent was busily digging out morsels which were promptly fed to the young. A young bird was shot near Akiak, August 13. Many insects and cocoons are hidden in winter under the bark of the spruce trees, and these furnish food for this hardy bird. A clear call *chee-r-rp* was noted in November.

Colaptes auratus borealis. Boreal Flicker. Several were seen in white spruces along a slough near Fairbanks August 7, 1911. For the use of the name *Colaptes a. borealis* see Ridgway, Proc. Biol. Soc. Wash., 24, 1911, p. 31.

Nuttallornis borealis. Olive-sided Flycatcher. A number were observed during May and June, 1912, in the tops of the highest white spruce trees along the North Fork of the Kuskokwim near its head. The tops of dead trees in the burned forest were preferred. They were first noted May 16. One specimen was taken.

Otocoris alpestris arcticola. Pallid Horned Lark. A few were seen June 4-5, 1912, about rocks and on the ground of the wind-swept ridges of Mount Sischu at about 3000 feet elevation. One specimen was secured.

Pica pica hudsonia. Magpie. At McGrath the wings and tail of a Magpie were seen nailed to the wall of a cabin. This bird had been killed by Mr. Bert Eldridge, a trapper, at the head of Big River.

Perisoreus canadensis fumifrons. Alaskan Jay. Common in white spruce-paper birch forest, in black spruce forest, in burned timber, and in lowland willows along the streams. In winter they also frequent the neighborhood of cabins and camps. Specimens were taken at Tanana and at the head of the North Fork of the Kuskokwim; and by H. J. Christoffers at Fairbanks. They were common at these places and were noted also along the Cosna River, at the junction of the McKinley Fork with the North Fork of the Kuskokwim, on the hills near Takotna at timber-line, and on the Kuskokwim-Yukon portage.

These birds are a great nuisance to trappers as they steal the bait and spring the traps set for fur animals. Exposed caches of food are likely to be carried away piecemeal by them. In several instances these jays were seen to attack hawks and hawk owls.

During the latter part of the time of nesting until the young are able to fly, from about April 1 to June 1, these jays keep almost entirely away from the vicinity of camps and cabins. Parents and blackish young in family groups were first seen at the head of the North Fork of the Kuskokwim on May 1, 1912. About June 1 they began to appear quite often about the cabin, but they never became so numerous nor so bold as they were during the winter.

Corvus corax principalis. Northern Raven. Common resident. They occur regularly in the white spruce and paper birch forest along the streams and also range out over the barren hills. At Tanana numbers feed in winter on the garbage thrown out on the ice of the Yukon. February 19, 1912, several were seen along the Cosna River. April 12 and 14, ravens were observed carrying sticks, apparently for nests, in black spruce forest on the Cosna River and near the head of the North Fork of the Kuskokwim. May 8 a raven was seen flying over Lake Minchumina. One was noted July 4 at the junction of the McKinley Fork with the North Fork, and three were seen above the East Fork on July 7. Near Akiak several were seen August 18, and at Andreafski several more on September 18. One specimen was preserved from Tanana.

Euphagus carolinus. Rusty Blackbird. A few were noted August 17, 1911, at the edge of a slough near Fairbanks. They were numerous in May and June, 1912, about marshes and on the shores of lakes at the head of the North Fork of the Kuskokwim. One specimen was taken. In 1912 they were first noted May 8 at Lake Minchumina. Several were found at the junction of the McKinley Fork with the North Fork, July 2. In the swamps below Kaltshak they were common on August 15.

Pinicola enucleator alascensis. Alaska Pine Grosbeak. A few were seen in black spruce forest near Tanana, October 6, 1911, and in burned spruces, October 20, and several specimens were secured. Specimens were also taken at Fairbanks by H. J. Christoffers.

Loxia leucoptera. White-winged Crossbill. A specimen was taken August 17, 1911, from a flock of five which were in the top of a dead black spruce in burned timber near Fairbanks. In March and April, 1912, they were common in black spruce timber at the head of the North Fork of the Kuskokwim, and one specimen was secured. On July 7 and 11 several pairs were noted in white spruce timber and in willows along the North Fork above the entrance of the East Fork. They are locally called the "canary", evidently with reference to their song, which, as heard in the winter, is clear and very sweet.

Acanthis hornemanni exilipes. Hoary Redpoll. Occasionally seen in lowland willows and alders, in white spruce forest, and in burned black spruce forest near Tanana in flocks of six to one hundred birds, from December 28, 1911, to February 15, 1912. Specimens were taken.

Acanthis linaria linaria. Redpoll. Common in flocks at Tanana and at the head of the North Fork of the Kuskokwim during the fall and winter of 1911-1912. Specimens were taken at both localities. They occur in willows and alders, in white spruce and paper birch forest, in black spruce forest, in blueberries and dwarf birches, and in burned forest. None were seen above timber-line. Their principal winter food is the seeds of alders and dwarf birches. February 17, 1912, a number were observed drinking the water at an overflow on the Tanana River near Coskaket. At the head of the North Fork of the Kuskokwim three nests were found in willows and in a small paper birch in late May and early June, 1912. (See Dice, Condor, 20, 1918, pp. 129-131.) Their call is a drawn out *cheed*.

Acanthis linaria holboellii. Holböll Redpoll. One specimen was taken December 3, 1911, from a small flock in burned black spruce forest ten miles north of Tanana. Each flock of redpolls seems to be composed of only one variety, although the three varieties occur in the same locality.

Plectrophenax nivalis nivalis. Snow Bunting. Numerous in large flocks April 7, 1912, in burned white spruce-paper birch forest and in partially cleared parts of the Tanana Valley near Tanana.

Passerculus sandwichensis alaudinus. Western Savannah Sparrow. A few noted in white spruce-paper birch forest along the North Fork of the Kuskokwim near its head in May and June, 1912. They first appeared on May 15. One specimen was secured. Another was taken at the junction with the McKinley Fork in black spruces on July 2. On July 27 several were seen and one secured in dwarf birch and sphagnum just above timber-line on the hills near Takotna. A well-grown young was taken August 16 at the edge of willows on a river-bar a short distance below Kaltshak. Mr. H. J. Christoffers took one specimen at Fairbanks.

Zonotrichia leucophrys gambellii. Gambel Sparrow. A flock of young accompanied by parents was noted in willows beside the Yukon at Sheep Creek near Eagle, July 20, 1911. One was secured in scrub alders and willows in a clearing on a low hillside near Fairbanks, August 17. Common at Tanana in the summer of 1911, where they were last seen September 2. Common in May and June, 1912, in white spruce-paper birch forest and in willows along the Kuskokwim near the head of the North Fork, where the first male arrived May 17. A nest containing five well-incubated eggs was found June 6 in burned black spruce timber. The nest was composed of dried grasses and leaves and was placed in a slight depression of the ground under a dwarf birch. On July 18 several were seen in a small garden at Boerner. A specimen was taken July 27 in scrub alders near timber-line on the hills near Takotna. Other specimens were preserved from Tanana and from the head of the North Fork of the Kuskokwim.

Spizella monticola ochracea. Western Tree Sparrow. Common in small flocks near Tanana in the fall of 1911, until September 28. They were first seen at the head of the North Fork of the Kuskokwim on May 7, 1912, when a flock of twenty was observed. One was seen on a willow-bar below Kaltshak on August 16. They occur in lowland willows and alders, in white spruce-paper birch forest, and in burned white

spruce timber. Specimens were taken at Tanana, at the head of the North Fork, and by H. J. Christoffers at Fairbanks.

Junco hyemalis hyemalis. Slate-colored Junco. Common in flocks near Tanana in the fall of 1911, until September 28. Common also in 1912 along the Kuskokwim near the head of the North Fork, where the first pair appeared May 3. A young bird just able to fly was seen in the company of a parent on June 12. Several adults were noted near timber-line on Mount Sischu, June 5. July 4 a nest with four eggs was found under the edge of a rock in burned black spruces on a hillside near the junction with the McKinley Fork. Other records are from near the junction with the East Fork, from Takotna, and August 13 from the Kuskokwim near the mouth of the river. Specimens were taken at Tanana and at the head of the North Fork. Their habitats are the willows and alders near the river, white spruce birch forest, burned forest, and the alders near timber-line. The song heard in May is a simple *chee-chee-chee-chee-chee-chee*.

Melospiza lincolni lincolni. Lincoln Sparrow. Several adults and a number of young were seen in heavy grass in burned white spruce timber near the edge of the Tanana River above Fairbanks, August 4-5, 1911, and one specimen was secured. Several were seen in a swampy area on August 17.

Passerella iliaca iliaca. Fox Sparrow. Common during May and June, 1912, along the Kuskokwim near the head of the North Fork, where they were first noted May 5. One specimen was taken. Their habitat is chiefly in the white spruces, paper birches, and willows along the streams, though one was noted in song in black spruces several hundred yards from other types of forest. The song of the male during May is a trilled *Ee-chee wee-rra-rra-rra-ree*. The call note is a sharp *tchip*. Several were noted in a garden at Boerner, July 18.

Petrochelidon lunifrons lunifrons. Cliff Swallow. A few were seen near Tanana in the summer of 1911. At Rampart on July 21, 1911, and at Takotna on July 22, 1912, a number were noted nesting on houses in the towns.

Hirundo erythrogaster. Barn Swallow. One was seen flying over the river in front of Takotna, July 24, 1912.

Riparia riparia. Bank Swallow. Abundant in the summer of 1912 all along the Kuskokwim from the head of the North Fork to Georgetown. They were first seen at the head of the North Fork on May 22. Great nest colonies were noted in the soft dirt banks of the rivers, and these were seen to be in use at least from June 20. No swallows were seen below Georgetown after August 9.

Bombicilla garrula. Bohemian Waxwing. A small flock was seen May 9, 1912, in black spruces near Lake Minchumina. Several small flocks were found in burned white spruce forest near the head of the North Fork of the Kuskokwim on May 16 and again several days later. One specimen was taken.

Lanius borealis invidius. Northern Shrike. One specimen was taken near Fairbanks, September 8, 1911, by H. J. Christoffers.

Vermivora celata celata. Orange-crowned Warbler. A specimen was taken August 31, 1911, in scrub alders in an open, burned area of the Yukon Valley near Tanana. Several were seen in willows near the head of the North Fork of the Kuskokwim during May, 1912, where they first appeared May 20. One specimen was collected. August 17 several were seen along the Kuskokwim a short distance above Akiak.

Dendroica coronata hooveri. Alaska Myrtle Warbler. Small flocks were seen near Tanana during late August and until September 5, 1911. In May and June, 1912, a few were found at the head of the North Fork of the Kuskokwim, where they first appeared May 12. They are found in willows and alders along the streams and in white spruce and paper birch timber. The song heard in May was a rapid *tisp*, ending in a trill: *tchee-chee-chee-chee-chee-ee-ee-ee-t*. Specimens were preserved from Tanana, and by H. J. Christoffers from Fairbanks.

Selurus noveboracensis notabilis. Grinnell Water-Thrush. In 1912 they first appeared at the head of the North Fork of the Kuskokwim on May 16, and soon became common along the margins of streams and on lake shores. They occur also in willows and in white spruce-paper birch forest. One specimen was taken. June 24 they were noted on the muddy shores of Lake Minchumina. Along the North Fork they were commonly noted to July 6 down to below the junction with the McKinley Fork. Several

were seen August 17 a short distance above Akiak. The song in May is a simple *chibby-chibby-chibby-chib-chib-chib-chib*.

Wilsonia pusilla pusilla. Wilson Warbler. A few were seen during May, 1912, in willows and in white spruce and paper birch forest along the North Fork of the Kuskokwim near its head. The first arrivals were noted May 19, when two males were found in song, one of which was collected. On June 4 a male was seen in white spruce timber in a ravine near timber-line on Mount Sischu. Another was seen in alders in a small ravine in the hills at timber-line near Takotna, July 28.

Anthus rubescens. Pipit. Small flocks were seen on cultivated fields near Tanana on August 29 and 31, 1911. A specimen was collected from a small flock in a grassy field, September 8. Several were seen on a barren ridge near the summit of Mount Sischu, June 5, 1912. H. J. Christoffers took a specimen at Fairbanks.

Penthestes atricapillus turneri. Yukon Chickadee. A small flock was seen August 17, 1912, in willows on the banks of the Kuskokwim a short distance above Akiak.

Penthestes hudsonicus hudsonicus. Hudsonian Chickadee. Occasional resident near Tanana, along the Cosna River, and at the head of the North Fork of the Kuskokwim. Specimens were taken at Tanana and at the head of the North Fork. They occur in willows and alders and in white spruce and paper birch forest. They were noted near the junction with the South Fork, and in alders near timber-line at Takotna.

Acanthopneuste borealis kennicotti. Kennicott Willow Warbler. A number in loose flocks were seen July 28 and 29, 1912, in patches of scrub alders just below timber-line on the hills near Takotna. One specimen was preserved.

Regulus calendula calendula. Ruby-crowned Kinglet. Occasionally seen near Tanana in late August and until September 2, 1911. One specimen was taken. A few were found in May and June, 1912, near the head of the North Fork of the Kuskokwim, where they first appeared May 5. Several were noted near Lake Minchumina, May 9. July 23 one was seen in alders near timber-line on the hills near Takotna. In the valleys they occur in willows and alders and in white spruce and paper-birch forest.

Hylocichla aliciae aliciae. Gray-cheeked Thrush. Numerous in black spruces and in burned black spruce timber near the head of the North Fork of the Kuskokwim in the spring of 1912. Several were also seen on the muddy shore of a small sink lake. A specimen was taken June 9.

Hylocichla ustulata swainsoni. Olive-backed Thrush. Common in white spruce and paper birch forest along the North Fork of the Kuskokwim near its head in the spring of 1912. A specimen was secured July 4 at the junction with the McKinley Fork.

Planesticus migratorius migratorius. Eastern Robin. Numerous, often in large flocks, near Fairbanks and Tanana in July and August, 1911; remaining at Tanana until September 16. In the fall they feed extensively on blueberries and cranberries. The first spring arrival in 1912 was seen May 9 at Lake Minchumina. A few were found in May and June near the head of the North Fork of the Kuskokwim. A specimen was taken July 3 at the junction with the McKinley Fork. Young and old were noted in alders near timber-line at Takotna, July 29. A few were seen on the Kuskokwim-Yukon portage September 4. They occur in alders, in black spruces, in burned forest, in patches of blueberries, and in white spruce and paper-birch forest.

Ixoreus naevius meruloides. Northern Varied Thrush. Several small flocks were seen near Tanana, September 10, 1911, in black spruce timber, where they were feeding on blueberries. One specimen was preserved. Numerous in May and June, 1912, in white spruces along the North Fork of the Kuskokwim, where they first appeared May 2. Often they were noted apparently feeding on the gravel-bars and mud-bars of the river. Young in company with parents were seen June 20. Several were found July 3 at the junction with the McKinley Fork. Noted in alders near timber-line at Takotna, July 23 and 28. A specimen was secured at Fairbanks by H. J. Christoffers.

Saxicola oenanthe oenanthe. Wheatear. A few were seen August 18, 1911, about a log jam in a slough, and on a telephone pole near Fairbanks. Several were observed to capture flying insects in the air.

Museum of Zoology, Ann Arbor, Michigan, March 31, 1920.

FROM FIELD AND STUDY

Sunlight and Shadow.—Since we put away the gun and took to the field-glass I wonder if many a doubtful bird on our local lists, admitted solely upon field-glass observation, could not be traced to the effect of sunlight or shadows. While doing a little collecting recently in the winter woods of southeastern Arkansas this was brought home to me as never before.

The man with the field-glass finds the sunshine one of his greatest drawbacks to identification. It is a good thing to have light on a subject but a very unsatisfactory condition to have a glare of brilliant sunlight on a bird we are endeavoring to identify. And should it be necessary for us to look directly toward the sun, we may find the identification of the species well nigh impossible. What a gorgeous plumage a little sunshine can impart to some dull feathered and commonplace bird! The bird-man afield often finds it necessary to work under conditions that are far from ideal. It is not always possible to keep one's back to the sun and it is generally at the least expected and unprepared-for moment that the prize of the day appears. A living bird is an active creature and rarely is it so accommodating as to sit still long enough for us to make out every detail of its plumage. Possibly ninety-five times out of a hundred our bird moves on before we have clearly seen that one *sure* identification mark. If we are fortunate we may be able to follow it and observe it under more favorable conditions, but the chances are that we have seen the last of it for that day and we have just seen enough to set us guessing. It may be that we caught but a fleeting glimpse of it, or we may have had it under observation for a few seconds, but because of some projecting twig we have failed to see that much desired field mark. No doubt we can name its family and perhaps we are almost certain about its species. We saw enough to be all but *positive* and it takes but a freak of light or shadow to supply that one half hidden spot.

One trouble is that we are too apt to look for the rare and unusual in the bird we meet. We should curb our enthusiasm and imagination and treat every bird we see as the common and to-be-expected species for our locality until we have *proven* it to be otherwise, and when the identity lies in some minor detail, the proof should always be the bird in the hand.

In the cause of accurate observation it might be a good thing if every field-glass student could use a gun at least a few times in his or her life. A gun makes one sceptical and thereby careful. When you identify a bird as this or that with the glasses and then shoot it and find it to be something different, it brings home to you as nothing else can, how very easy it is to be mistaken. I believe that most collectors have had such an experience.

The field-glass observer is often hurt because someone doubts his accuracy in identifying some unusual bird, but no one realizes better than the man who has collected, what an easy thing it is to misidentify a bird, and when the identification rests on some minor point, it is little wonder that he questions it. I believe my own field-glass lists would be larger had I never collected. Many is the bird I leave off my list whose identity I am all but *positive* about.

Down in Arkansas one day I saw a Hooded Warbler; I identified it with the field-glass, but my gun transformed it into a Black-throated Green Warbler, and no one could have been more surprised than I. The sunlight or the shadows had played me a trick.—CHRESWELL J. HUNT, *Chicago, June 2, 1920.*

How Fast Can a Roadrunner Run?—The Roadrunner has gained the reputation of being swift of foot, but is its reputation based on actual swiftness, or merely on the fact that the bird gets from place to place by the conspicuous use of its legs? In his article on "Habits and Food of the Roadrunner in California" (Univ. Calif. Publ. Zool., vol. 17, 1916, p. 27) H. C. Bryant quotes from Heermann that the Roadrunner "may . . . be overtaken when followed on horseback over the vast open plains" and that Heermann "once saw one captured by a couple of dogs." If these statements are accepted, as they will be by most people, not for what they literally say, but for what they imply in regard to the speed of the Roadrunner, they are calculated, I fear, to give one a slightly

exaggerated impression. In describing how fast mice can scoot I could, with a dishonest sort of truthfulness, state that I have seen them run down by automobiles going at sixty miles an hour.

On July 21, 1919, H. G. White and I were travelling by Ford down the Arroyo Seco Canyon, Monterey County, California. Rounding a curve at very low speed we surprised a Valley Quail in the road. Like the Irishman on the track in front of the onrushing locomotive, who said his life would be saved if he reached the switch first, our quail seemed to figure that its only salvation lay in outsprinting the Ford down the road. We gradually increased our speed till the bird was pressed to its utmost and could no longer gain on us. At this stage of the race our speedometer registered 12 miles an hour.

Next day, when en route from Soledad to the Gabilan Range via Stonewall Creek, we had exactly the same experience with a Roadrunner. At the top speed to which we provoked our victim, the famous runner was moving at the tremendous rate of 10 miles an hour on a practically level piece of road.

These two records would be more conclusive if backed up by others of the same kind. Both birds, however, seemed to be able-bodied adults with nothing the matter with their legs, and their speed, it seems fair to believe, must have been not far from average. It would nevertheless be of interest if other ornithological motorists could make similar tests. Considering the propensity of both the Roadrunner and the Valley Quail for getting in the road ahead of machines and trying to beat them to the next turning-off place, it ought to be possible for observers to gather some data on the subject. Is the Quail really swifter than the Roadrunner? Have we any bird swifter—or less slow—than either? For example, how about the Ring-necked Pheasant (*Phasianus torquatus*), or even the barnyard rooster, when urged?

It might be in good order here to urge again the opportunity offered motorists for testing the speed of birds in flight, as already discussed by Alexander Wetmore (Condor, xvii, May, 1916, pp. 112-113). It is of common occurrence for birds, scared up at the roadside, to fly long distances just ahead or abreast of the machine. Some seem to imagine they are thereby escaping from danger. Others act as if they considered the thing a sort of game. That suggests another idea: do birds have a game-playing instinct or capacity?—RICHARD HUNT, *Museum of Vertebrate Zoology, Berkeley, California, June 11, 1920.*

Notes on Some Birds of Santa Cruz Island, California.—Through the courtesy of Mr. F. Calbre of San Francisco, the writer was enabled to spend from January 22 to January 26, 1920, on Santa Cruz Island. The following additions to Mr. A. B. Howell's excellent paper on the Birds of the Channel Islands may be of interest.

Zonotrichia leucophrys nuttalli. Specimens of this subspecies, put by Mr. Howell in the hypothetical list, were taken and identified by Mr. L. E. Wyman. The subspecies seemed about equally numerous with *Z. l. gambeli*.

Hylocichla guttata guttata. A small dark Hermit Thrush was taken and sent to Mr. Swarth. The skin reached him in poor condition, but he writes that he believes it to be the Dwarf Hermit Thrush. This subspecies was also placed by Mr. Howell on the hypothetical list.

Telmatoodytes palustris picusius. A single Marsh Wren taken at Prisoner's Harbor in the only patch of cat-tails seen on the island, was identified by Mr. Wyman as of this subspecies. It has not before been recorded from Santa Cruz Island.

Geothlypis trichas scirpicola. A female of this subspecies of Yellowthroat was taken in the same patch of cat-tails at Prisoner's Harbor. It has not before been recorded from the island.

Sialia currucoides. Mountain Bluebirds, not before recorded from any of the Channel Islands, were observed in three different localities. A scattered flock of over twenty were hovering and feeding on the mesa near Black Point at the west end of the island. Another small flock was seen near the ranch house at the west end, and two birds were seen in the pines in the central part of the main valley.

Nucifraga columbiana. Clark Nutcrackers were reported in the winter of 1919-1920 from many points near the coast, but it is nevertheless surprising that they crossed the twenty-six miles of channel and reached Santa Cruz Island. The birds, called Jack-

daws by the local fishermen and ranchers, attracted their attention as early as October, 1919. These men had never seen them on the island before. Scattered birds were seen by the writer throughout the pine belts in January and again in the first week of April, on a second trip to the island. It is tempting to speculate what might happen if the nomadic impulse had died out after six months and the species should become a permanent resident of the pine forests on the island, in which Crossbills and Red-breasted Nuthatches are already resident.—RALPH HOFFMANN, *Stockbridge, Massachusetts, June 4, 1920.*

A Peculiar Flicker Habit.—For a time a Red-shafted Flicker (*Colaptes cafer collaris*) enjoyed himself by drumming on a sheet metal air vent on the roof of our house. As a rule he did his drumming early in the morning. One time I caught him in the act of drumming and it was interesting to watch him. The noise sounded very much like a small riveting machine at work.—LUTHER LITTLE, *South Pasadena, California, July 15, 1920.*

Authors' Names in the Second Condor Index.—In the Second Ten Year Index to The Condor for 1909-1918, by J. R. Pemberton, full names of authors were included as far as possible. In about 40 cases it proved impracticable to secure the names in full, but about half of them are now known. In presenting these names the opportunity may be taken to correct a few errors which inadvertently occurred in printing the Index. Such corrected names are marked by an asterisk, and names not generally used are enclosed in brackets.

Following are some of the incomplete names in full:

| | |
|---------------------------------|------------------------------|
| Alexander, Annie Montague | Figgins, Jesse Dade |
| Bailey, Vernon [Orlando] | Hunt, Richard Montague |
| Bergtold, William Harry* | Kirn, Albert* Joseph Bernard |
| Brooks, Allan [Cyril] | McAtee, Waldo* Lee |
| Bryant, Amy Morrish | McLean, Donald Dudley |
| Bunker, Charles Dean | Mailliard, Ernest Chase |
| Buturlin, Sergius Alexandrovich | Palmer, Robert Hastings |
| Cameron, Ewen Somerled | Vogelsang, Charles Adolph |
| Dixon, Joseph [Scattergood] | Wetmore, [Frank] Alexander |
| Dubois, Alexander Dawes | |

On pages 7 and 8 of the Index are given full names of authors whose papers appeared in the first ten volumes of THE CONDOR. To this list should now be added Gerald Bamber Thomas and Clark Crocker Van Fleet. Three names in the list require correction, viz., Stephen Alfred Forbes, Frederick Hall Fowler, and William Le Grange Ralph. Examination will show that the first two were inadvertently combined and the last contained a typographical error. These additions leave 31 names in the first Index and about 20 in the second, still incomplete.—T. S. PALMER, *Washington, D. C., July 19, 1920.*

Bryant Marsh Sparrow in the Hills.—In The Condor for March, 1920 (page 63), there is an article by Joseph Mailliard and J. W. Mailliard relative to the breeding of the Bryant Marsh Sparrow (*Passerculus sandwichensis bryanti*) in other than low ground. My records show that a set of four eggs, with nest and parent bird, was taken by H. H. Bailey in San Mateo County, California, on May 1, 1904. The nest was placed on the ground in a slight depression, well hidden by a clump of grass four inches high. The location was almost at the top of a hill, between the bay and ocean, and, as I remember it, three miles or more from the salt marsh. The elevation, I judge, was around 350-400 feet.—HAROLD H. BAILEY, *Newport News, Virginia, July 12, 1920.*

Blue-fronted Jay Nesting in Los Angeles, California.—A number of Blue-fronted Jays (*Cyanocitta stelleri frontalis*) spent the winter of 1919-20 in different parts of Los Angeles and were reported in THE CONDOR from several localities. A group of them lingered late into the spring in Griffith Park where they were noted by the President of

the Bird-lovers' Club of the Southwest Museum about May 5 carrying nesting material. Later they were seen by members of the Audubon Society. On July 9, 1920, the president and two other bird students from the Bird-lovers' Club saw four of these birds in Griffith Park near the Western Avenue entrance. Though fully feathered two of them were evidently young birds, for they had the light colored edges to the corners of the mouth that indicate youth, the soft downy look of new plumage, a different tone from that of the older birds, and they were actually being fed by a mature Blue-fronted Jay. The food given them was a highly sophisticated type for these creatures of the wild, for it consisted of pieces of what upon examination appeared to be an ice-cream cone which had been soaked soft and left on the bank beside a much-frequented trail. The birds however, were evidently used to civilization, for the one feeding paid no attention to the three observers less than twenty feet away, but made several visits to the flat, pancake-like object, tearing off strips and stuffing its mouth as full as possible before flying into a large sycamore tree where it was seen to feed the two young birds. This air of wontedness to civilization in the old bird, and the evident fact that the young birds had not been long out of the nest seem sufficient proof to me that the nest must have been in the immediate neighborhood. It would be interesting to know if this is the first record of the Blue-fronted Jay nesting in the Upper Sonoran Zone in Southern California.—MARY MANN MILLER, *Los Angeles, California, July 10, 1920.*



Fig. 38. GOURD USED AS NEST SITE BY A PAIR OF ANTHONY BROWN TOWHEES.

Domesticating California Birds.—

That many of our California birds will become more domestic with the years is evidenced by the experience of the writer. I have put up boxes, cans and gourds about my suburban home and made several drinking fountains in suitable places. For three years a San Diego Wren has occupied gourds near the door. A Black Phoebe has built over the window. An Ash-throated Flycatcher raised a brood in the elbow of an abandoned stove-pipe on an out-house. The Green-backed Goldfinch, House Finch (in boxes also), and California Shrike nest close to the house in orchard trees. A Mockingbird invariably builds in a thick tree in the back yard. The Anna Hummingbird and Arizona Hooded Oriole nest every year in one of my sugar gums. Cliff Swallows build on my neighbor's barn—and feed on my bees.

The Anthony Brown Towhee has often built in an elder bush or orchard tree; but not until last year did one ever use an artificial nest. A bird chose to raise a brood in a gourd hanging on the corner of a chicken yard in the full sun without a bit of shelter near it. Last April another Anthony Towhee (perhaps the same bird) nested in another gourd which was placed in the lower forks of an acacia tree about four feet from the

ground. Although disturbed daily this bird raised her brood of four. I have seen scores of nests of Anthony Towhee in low bushes and found one years ago on the edge of a low bank in the grass, but never saw one in an artificial nest until last year—which shows that the birds can learn to get along with people.—CARROLL DEWILTON SCOTT, *San Diego, California, July 15, 1920.*

Clark Nutcracker and White-winged Dove in Southern California.—On a recent trip to the Laguna Mountains, San Diego County, I was rather surprised to find the Clark Nutcracker (*Nucifraga columbiana*) in flocks ranging from a few birds to fifteen or twenty in the flock. They were on the ground, tearing up the pine needles in search of food. Observed May 31 and June 1.

It may be of interest to note that at least one pair of White-winged Doves (*Melospelia asiatica trudeauti*) is nesting in the vicinity (Brawley). They arrived May 4 and have been about until the present date, June 12.—JOHN C. FORTINER, Brawley, California, June 12, 1920.

Interesting Records from the San Joaquin Valley Region.—

Costa Hummingbird. *Calypte costae*. On several occasions in the early spring months while collecting in the arid hills bordering the San Joaquin Valley at a point about due west from Dos Palos, I have found hummingbirds' nests of the previous season's use, built on branches of sage bushes overhanging dry gullies. Those examined have all been unmistakable nests of the Costa Hummingbird and quite typical in both situation and construction. In fact, they differ in no way from nests of this species which I collected in Ventura County in 1916. From this evidence it would seem safe to extend the known breeding range of this species northward along the east slope of these hills nearly to the 37th Parallel.

Hammond Flycatcher. *Empidonax hammondi*. An unseasonable record for this species is that of a male in bright plumage taken in the bottom lands of the Merced River near Livingston, Merced County, on December 20, 1918. The bird was frequenting the inclining trunks of some large, old willows in a rather damp locality. It was active and strong on the wing and no trace of any injury could be found while the skin was being made up. That this Flycatcher had been able to secure an abundance of food was very evident as the skin was reeking with fat.

Dusky Warbler. *Vermivora celata sordida*. On January 8, 1919, I noticed three Warblers which looked like rather dark examples of *lutescens*. They were frequenting some weeds along a drainage canal near Atwater, Merced County. On the 11th of the same month I made a hurried trip to the Merced River near Irwin City, and again encountered three of these birds after special search. The presence of *lutescens* itself would have been interesting at this date but I was convinced that the birds previously seen were *sordida*, and the single specimen taken has been so identified by Mr. H. S. Swarth. This species evidently wintered in some numbers in the San Joaquin Valley during the winter of 1918-19.—JOHN G. TYLER, Turlock, California, June 30, 1920.

Nesting of the Blue-fronted Jay in South Pasadena.—During the Christmas holidays my attention was called to a number of Blue-fronted Jays (*Cyanocitta stelleri frontalis*) flying about in a row of large eucalytus trees which form a boundary between our place and the one next to us. The jays were very noisy and were continually chasing the California Woodpeckers about the trees. The jays were seen and heard, from time to time subsequently, which surprised me very much, for at one time I thought they had left for their mountain home.

On Sunday morning, June 6, 1920, I heard a pair of birds scolding and went to see what the disturbance was. My presence on the scene interested the birds and they followed me about while I looked for a nest. I could not find a nest, but while walking about spied a young bird on the ground. This bird was dead and had probably been killed from a fall as it was just about time for it to leave the nest. The bird was saved and is now in my collection. Up to the present time (July 15) the jays are still about. It will be interesting to see if they will be on hand next spring.—LUTHER LITTLE, South Pasadena, California, July 15, 1920.

An Ovenbird on the Mohave Desert.—At about 10:45 on the morning of May 18, 1920, I was seated, in company with Dr. Francis B. Sumner, on a pile of bags, boxes, bed-rolls and other items of camp equipment which were stacked ready for transportation from our station at 5 miles south of Lavi, San Bernardino County, California, to Ludlow, about fifteen miles nearer civilization. Our eyes were fixed hopefully on a

black speck, which, accompanied by an inverted image of itself, we had reason to believe was approaching us across the glaring white surface of a dry lake, and would presently resolve itself into the truck which had promised to come for us and our outfit at 10 A. M.

At almost exactly 11 o'clock the truck reached us and came to a standstill beside a nearby windmill and tank of magnesia water, where the driver stopped his engine to cool it off. The truck, alas, was not the one we had ordered. It belonged to a mining company and was on its way into the Bullion Mountains above us.

Nevertheless, it had hardly come to a standstill, when a little bird appeared in the road beneath it, walking about gratefully in the small patch of shade afforded. Dr. Sumner spied the bird first. He seemed to think it odd or unusual, and asked me with interest what kind of a bird it might be. The fact that the bird was *walking*, and in a very teetery fashion, allowed me about two guesses, and I replied that the bird was either a Water-Thrush or an Ovenbird. The bird was tame, and I was soon able to see that the back was green and the crown old-gold. I asked Paul, the truck driver, to keep his eye on the bird while I rummaged through the packed outfit for my gun. Paul did as I asked him, and I am now able to prove to any who might otherwise have been skeptical that the bird was an Ovenbird (*Seiurus aurocapillus*)—a male with testes $5/16$ of an inch in diameter. The study-skin now bears no. 40648, in the California Museum of Vertebrate Zoology.

This is the only proved case of an Ovenbird on the mainland of California, though two were observed on the Farallon Islands, May 29, 1911 (Dawson, Condor, xiii, 1911, p. 167), one of which was taken.

I am not properly elated, I fear, at having been placed by chance under the necessity of taking the life of a lost Ovenbird on the inhospitable desert. In fact it seemed the irony of fate that of all birds I should have met this one, whom I have heard sing its ecstatic aerial song by moonlight over the pine forests of Massachusetts in June, and whom I have celebrated in a poem published in "Poetry: a Magazine of Verse."—RICHARD HUNT, Museum of Vertebrate Zoology, Berkeley, California, June 11, 1920.

EDITORIAL NOTES AND NEWS

To those interested in the protection and conservation of wild life upon our waters and whose attention has been called to the destruction of sea-bird life by the discharge of refuse oil from the ballast tanks of oil carriers into the water, the news will be gratifying that the only remaining company which persisted in this, the Union Oil Company, has notified the California Academy of Sciences of the cessation of this practice. A letter has been recently received from this company stating that it had completed the installation of ballast tanks to take care of this waste oil instead of pumping it overboard as was the former custom, and that there would be no further cause for complaint. The Audubon Association of the Pacific, the Cooper Ornithological Club and the California Academy of Sciences have fought this indefensible custom so vigorously as to bring about this satisfactory result.

Cooper Club members will be interested in the communication from Mr. W. Leon Dawson, addressed to the Club, as entered in the minutes of the Northern Division (p. 193), and in the Committee's recommendation concerning the subject matter thereof. In accordance with the Committee's suggestion, an understanding has been reached

with Mr. Dawson whereby, agreeable to all concerned, the Cooper Ornithological Club as an organization is no longer identified in any way with the "Birds of California" enterprise. We are assured by Mr. Dawson that prospects are favorable for the appearance of the first fascicle in January next, the plan now being to issue the work part by part.

A contribution of a nature to be exceedingly useful in systematic ornithology has just appeared under the authorship of Richard C. McGregor. This is his "Index to the Genera of Birds", issued March 31, 1920, from the Bureau of Science, Manila ("Publication no. 14", 8vo, 185 pp.). This list, of 8839 names, is rendered in compact form by being printed in small yet comfortably distinct type, three columns to the page, and with citations reduced to the barest essentials. By a special limitation of scope only five previous authors are cited, yet it seems practically certain that every genus name proposed up to 1917 is included. Enough information is given in connection with each name to enable the enquirer to find out all about its history. The amount of work involved in an index of this sort must be enormous. For example, the author states that he gathered 25,000 original reference slips,

as an initial step in the compilation. The results give evidence of the highest plane of accuracy. McGregor has thereby won an enviable reputation for achievement in the field of avian taxonomy.

In a review published in the "Transactions of the North Staffordshire Field Club" (vol. III, 1917-18, p. 97), our British confrere, Mr. F. C. R. Jourdain, makes some timely comments on the standards that should be demanded in modern ornithological work. Compilers of local reports may well take these remarks to heart: "Ornithology must necessarily be a progressive science and what was deemed satisfactory half a century ago ought not to satisfy the student of today. A far higher standard of accuracy and precision is demanded from the recorder of the present day than in time past, and the bald and unconvincing statements, often entirely lacking in detail, which fill the pages of the older writers are now quite out of place. A county recorder must also be capable of discriminating between dubious and unreliable material and dependable observations, and should allow no personal considerations to influence him in accepting or rejecting records."

Northern Division members, and others likely to visit the San Francisco Bay region, should take note that the meetings of that Division are now scheduled for the fourth Thursday evening of each month. See announcement on inside back cover of this issue.

If a fair degree of prosperity has been yours this year, share it with the Cooper Club. Make a substantial contribution to our Endowment Fund. Become a benefactor in ornithology.

Collectors should bear in mind that for many reasons the autumn season is the most favorable time of the year for securing specimens. Plumages are then complete and unworn and they present their colors with intrinsic tones unfaded. Then, too, there is no danger of breaking up families, as during the spring months. Remember that adequate value, scientifically, is to be secured from a dead bird, only by recording, in addition to the usual data, its weight, its age (as determined from the condition of the skull), and the colors of the soft parts (by comparison with Ridgway's *Color Standards*).

MINUTES OF COOPER CLUB MEETINGS

NORTHERN DIVISION

JULY.—The regular meeting of the Northern Division of the Cooper Ornithological Club was held at the Museum of Vertebrate Zoology the evening of July 15. In the absence of the president and the vice-president,

Mr. Storer presided. Those present were: Members: Mesdames Abernathy, Allen, Hendren, Lander, McLellan, Mead, Schlesinger, and Thomson. Messrs. Bell, Carriger, Davies, Evermann, Storer, and Swarth. Visitors: Mesdames Lueddemann, Swarth, and Thomson; the Misses Barron, Bennet, Cowan, Jefferson, Lander, Lane, Latta, Livingstone, MacMillan, McCardle, Potter, Vaughan, and White. Also Messrs. Abell, Bean, and Master George S. Swarth.

The minutes of the June meeting were read and approved. Mr. A. C. Maxson, Mr. Roy B. Lyon, Mr. E. S. Cheney, and Mr. L. A. Elmore were elected members of the club. One name was proposed: Mr. R. Bruce Overington, 220 Golden Gate Ave., San Francisco, by J. Grinnell. There was also a recommendation filed, signed by four members, that Mrs. Florence Merriam Bailey be elected to Honorary membership in the Club.

Informal reports included those of two additional nests of the Western Robin found in the Bay region, one in Golden Gate Park, and one on the Berkeley Campus; also a report of crossbills feeding on aphides at Seattle. A report of the June Seattle meeting in connection with the meetings of the Pacific Division of the American Association for the Advancement of Science was given by Dr. Evermann. The program for the evening consisted of a talk by Mr. Carl Abell on "Color Engraving as Applied to Bird Pictures," using as an example of the complicated process the four color plates used in printing a group of Fox Sparrows as painted by Allan Brooks.

A motion presented by Dr. Evermann provided that the chair should appoint a committee of three to cooperate with the Audubon Association of the Pacific in an effort to bring about the repeal of the Alaska Bald Eagle Bounty Law. The motion was carried, the committee to be instructed to investigate also the movement to commercialize the waters of the Yellowstone. (The committee as appointed later consists of Dr. Evermann, Mr. Storer, and Mr. Lastreto.) Adjourned.—AMELIA S. ALLEN, *Secretary*.

AUGUST.—The regular meeting of the Northern Division was held at the Museum of Vertebrate Zoology, August 19, at 8 P. M. President Wright called the meeting to order. Those in attendance were: Members: Mesdames Allen, Bridges, Davidson, Griffin, Grinnell, Mead, Neugass, Parsons, Roe, Thomson, and Wythe; Messrs. Bell, Carriger, Cooper, Davies, Dawson, Gignoux, Grinnell,

Hill, Lastreto, Loomis, McLean, Mailliard, Storer, Swarth, and Wright; visitors, Mrs. Thomson, Miss Wythe, Mr. Bridges, and Douglass Aiken.

The minutes of the July meeting were read and approved and minutes of May, June and July meetings of the Southern Division were read. Mr. Bruce Overington was elected to membership, and the following names were proposed: Mrs. Edward Hohfeld, 754 3rd Ave., San Francisco, by Mrs. E. C. Pitcher; Mr. Arthur Frank, care of Western Washington Experiment Station, Puyallup, Washington, by Amelia S. Allen; and Miss Eleanor V. Bennet, 2904 Piedmont Ave., Berkeley, by Tracy I. Storer. Elections by the Southern Division in May, June and July were presented and approved. The recommendation presented at the July meeting that Mrs. Florence Merriam Bailey be elected an Honorary Member of the Club was adopted by an unanimous vote, and the secretary was instructed to submit the proposal to the Southern Division for its consideration.

The following communication was then read by the Secretary:

To the Northern Division of the Cooper Ornithological Club,
Mrs. Amelia S. Allen, Secretary;

Ladies and Gentlemen: It has been brought to my knowledge that the Cooper Ornithological Club has been subject to a certain amount of criticism on account of the continued non-appearance of my projected work upon "The Birds of California". This is a regrettable injustice, for such criticism has been in nowise deserved either on the part of the Cooper Club or of its leaders. It is my earnest desire, therefore, to remove at this time any grounds of misapprehension which may exist, both by means of a frank review of our previous relations, and by the elimination of a possible occasion of future misunderstanding.

In the first place, it should be clearly understood that the Cooper Ornithological Club has not now and never has had any slightest responsibility for the business management or the financing of "The Birds of California" enterprise. In my conduct of the business canvass on behalf of this publishing venture, I have scrupulously observed this point, and any misapprehension on the part of the public has been due to unwarranted inference and lack of inquiry. So far as the relations of the Birds of California enterprise and the Cooper Club are concerned, our agreement is vested in the resolutions passed at the November meetings of the Northern and the Southern Divisions of the C. O. C., in 1910, and reported on pages 39 and 40 of the Condor, Vol. xiii, Jan., 1911. It is well to recall the exact language of these reports. The minutes of the Northern Division state:

"...A motion was made by Mr. J. Mailliard, seconded by Mr. W. P. Taylor, that the Cooper Ornithological Club heartily endorse Mr. Dawson's plans, and pledge its moral

support and cooperation in the task of preparing a work upon the Birds of California. Motion was carried. A motion was made by Mr. W. K. Fisher, seconded by Mr. H. C. Bryant, that Mr. W. Leon Dawson be granted permission to associate the name of the Cooper Ornithological Club with his own on the title page of the forthcoming work, after the following formula: 'The Birds of California, by W. Leon Dawson with the cooperation of the Members of the Cooper Ornithological Club.'"

And the minutes of the Southern Division read:

"On motion by Mr. Willett, seconded by Mr. Shepardson, and duly carried, the Southern Division approved the action of the Northern Division in endorsing the proposal of Mr. W. L. Dawson; and also pledged its moral support and cooperation in the task of preparing a work on 'The Birds of California'. It also approved the decision that Mr. Dawson be permitted to associate the name of the Cooper Club with his own on the title page of the work."

These generous resolutions are plainly concerned with the authorship and scientific sponsorship of the proposed work, and not at all with financing and administration. I have never made any other representations or cherished any other hopes. The Cooper Ornithological Club is in nowise responsible, therefore, for the regrettable delay which has attended the preparation of the MS of "The Birds of California", for the speed of that preparation has always hinged squarely upon the financial support vouchsafed. That the MS has only just now been completed, after incredible difficulties and delays, is in nowise chargeable to the account of the Cooper Club.

In this connection I wish to testify that the Cooper Club has done all that properly lay within its power or province to facilitate the preparation of "The Birds of California". Its generous solicitude for the success of the enterprise has been manifest at every turn and now upon the eve of the hopeful success of that enterprise I wish to record my sincerest gratitude for the use of materials and for privileges unnumbered that have been vouchsafed in generous fulfillment of the Club's early promises. And if in any slightest degree our relationship has failed of its earliest expectation of mutual helpfulness, the fault has been mine through inability to fully appropriate the help offered. (I make solitary exception of cooperative help in picture-making; for when in the early spring of 1917 I was ready, according to program long promised but regrettably deferred, to organize a cooperative campaign of bird-photography, the use of the Condor columns was refused—upon what basis or authority I never clearly understood. The occasion did prove inappropriate, for patriotic reasons, and I mention the circumstance here not by way of animadversion, but in the interest of exact justice.)

Now in spite of the most explicit statements foregoing, I suspect that the ever indiscriminating public will still refuse to disassociate our responsibilities, and so to give the Cooper Ornithological Club the complete exoneration which is its due. In view of this probability I respectfully propose that our official relationship be henceforth dissolved.

I beg the Cooper Club to believe that in suggesting this step I am moved solely by a consideration of its welfare. The Cooper Club has other obligations of immediate moment. I am unwilling that "The Birds of California" should be an endlessly continuing cause, or that its fortunes should embarrass the forward-looking plans of the Cooper Club, whose patience, generous as it is, has been sadly taxed already. It would be grossly unfair of me to hold such generosity to further account.

Whether or not it will be your good pleasure to allow the ultimate use of the Club name upon the title page of "The Birds of California", where it will be very welcome, is a matter for you to decide. But for the present and with the utmost concern for what we conceive to be your real interests, which are alike dear to us, we will discontinue the use of the Cooper Club name in our advertisements and subscription sheets; and we will refer to our deep indebtedness to its officers and members in the past tense.

In conclusion, allow me to express my very deep sense of personal obligation to all who have helped and to those who will continue to help toward the publishing of "The Birds of California". There is not, I am assured, any ill-feeling on the part of any of us. Any little incompatibilities of temperament which may have appeared in a too-closely wedded state will be happily resolved by a larger measure of freedom. At least, so far as I am aware, only genuine goodwill has been manifest on either side. It is only with the hope of entering an even closer personal fellowship of cooperation with the leading ornithologists of the West that I would consent to abrogate a formal relationship fraught with at least the possibility of mutual embarrassment.

Respectfully yours,

W. LEON DAWSON.

Santa Barbara, August 14, 1920.

Mr. Swarth then submitted this report:

At the April, 1920, meeting of the Northern Division of the Cooper Ornithological Club, a committee was appointed, on motion of Mr. Lastreto, "to report at the next meeting as to what support the Club could offer toward encouraging the completion of "The Birds of California". Messrs. Law, Swarth and Evermann were appointed by the chair. The committee gave careful attention to the matter, but has been unable to submit recommendations before this time.

Most careful consideration has revealed no way in which the Club, as such, can assist in an early completion of "The Birds of California". The committee is familiar with the letter that has been presented by Mr. Dawson; it has been supplied with a copy of that letter. Mr. Dawson's proposal, just submitted, the outgrowth of earlier conferences, appears to meet squarely the present situation. It is unfortunate that Dr. Evermann is absent and so could not join in this report, but Mr. Law and Mr. Swarth, acting for the committee, recommend that the Club accept Mr. Dawson's proposal that any official relationship between the Cooper Ornithological Club and the Birds of California Publishing Company be herewith dissolved. The committee also recommends that Mr. Dawson's letter be entered verbatim in the minutes of this meeting.

On motion of Mr. Mailliard, seconded by Mr. Carriger, the recommendation was adopted.

Mr. Lastreto reported work done by the joint committee of the Audubon Association and the Cooper Club dealing respectively with the discharge of oil from oil steamers and with the destruction of Bald Eagles in Alaska.

Mr. Storer reported on attempts to commercialize the waters of the Yellowstone Park and other National Parks and National Forests, recommending that the Club memorialize the Secretary of the Interior and the Federal Power Commission to oppose the establishment of power stations in the National Parks. The motion to this effect, duly seconded, was carried.

On motion of Mr. Carriger it was voted to hold meetings of the Northern Division hereafter on the fourth Thursday of each month.

Business completed, Mr. Swarth gave a report upon his study of the distribution of birds in the Stikine River region. Adjourned.

—AMELIA S. ALLEN, Secretary.

SOUTHERN DIVISION

MAY 27, 1920.—Regular monthly meeting of the Southern Division of the Cooper Ornithological Club was held at the Museum of History, Science and Art, at 8:00 p. m. President Miller held the chair, with others present as follows: Messrs. Appleton, Bishop, Hanaford, Law, Little, Morcom, Nicholson, Pierce, Rich, Robertson, Ross, Taylor, and Wyman, and Mrs. Law; Mrs. Bishop was a visitor.

Minutes of the April meeting were read and approved. Persons whose names were proposed at the previous meeting were declared elected, on motion by Dr. Rich, seconded by Mr. Robertson. New applications were: Mrs. Anne B. Terry, 935 South Union Ave., and Mrs. Bertha Davis Martin, 1644 Maltman Ave., Los Angeles, both proposed by W. Lee Chambers. The Northern Division submitted the names of Mrs. Mervyn Neugass, Berkeley, Dwight R. Disney, Rupert, Idaho, and T. F. M. Williamson, Pasadena.

Communications from several congressmen were read, acknowledging receipt of the Club's protest against exploitation of a portion of Yellowstone National Park.

The session ended with the usual hour of informal discussion of things ornithological

and oological, during which the Secretary read extracts from a letter from George Willett, dated at Craig, Alaska, where he had wintered and in which locality he had collected extensively. Adjourned.—L. E. WYMAN, *Secretary*.

JUNE 24, 1920.—Regular monthly meeting of the Southern Division, Cooper Club, was held at the Museum of History, Science and Art, at 8:00 P. M. In the absence of the entire executive committee Mr. Robertson was acclaimed chairman and Mr. Chambers secretary pro tem. Other members present were Messrs. Dickey, Hanaford, Nokes, L. Peyton, Taylor and Van Rossem. Mr. King was a visitor.

New presentations for membership were: Antonio McLellan, 309 San Francisco St., El Paso, Texas, by H. H. Bailey; Charles Spangler Weiser, 105 West Sprugettsburg Ave., York, Pa., by W. Lee Chambers; Albert H. King, 3612 No. Griffin Ave., Los Angeles, by D. R. Dickey; and Mrs. H. J. Taylor, 1711 Douglas St., Sioux City, Iowa, by H. C. Bryant.

A letter from Congressman H. Z. Osborne, relative to the Yellowstone Park matter, promising vigilance in protecting the cause espoused by the Cooper Club, was read.

Mr. Dickey presented the following communication:

The death of Mr. Daggett necessitates election of a new custodian for the ornithological library bequeathed to the Southern Division many years ago by Mr. G. H. Chambliss and known as the Chambliss Library.

Mr. Lee Chambers, owing to the fact that he is already caring for certain of the Club's books, manuscripts, field notes, photographs, etc., and to his general knowledge of books of this nature, would seem the logical successor to this custodianship.

I, therefore, nominate Mr. Lee Chambers as Custodian of all books, pamphlets, prints, photographs, manuscripts, etc., which are, or shall become, the property of the Southern Division of the Cooper Ornithological Club, his tenure of this position to be at the pleasure of the Club.

In making this nomination, I further move that, if elected, Mr. Chambers be instructed to formally list all such material as he becomes custodian of (including the Chambliss Library) and submit that report at his early convenience to some subsequent meeting of the Southern Division of the Club, to the end that this list of books, etc., which we hope will be the nucleus ultimately of a complete ornithological working library, may be spread upon the minutes of that subsequent meeting of the Club, and that the members of the Southern Division may know how far this work of accumulation has already progressed.

I further suggest that Mr. Chambers, in case of his election as Custodian, take such measures as he may deem fit to secure the

absolute safety of this library while at the same time keeping it as available for reference as is compatible with that safety.

Motion as above by D. R. Dickey, seconded by Dr. Nokes. Carried unanimously.

Adjourned.—W. LEE CHAMBERS, *Secretary pro tem*.

JULY 29, 1920.—Regular monthly meeting of the Cooper Ornithological Club, Southern Division, was held at the Museum of History, Science and Art, at 8:00 P. M. In the absence of President Miller, Mr. Chambers was acclaimed chairman. Other members present were Messrs. Brown, Colburn, Hanaford, King, Lamb, Law, Nokes, Rittenhouse, Robertson, Taylor, Wall, Wyman; and Mrs. Law. Mr. Coots was a visitor.

Minutes of the May and June meetings were read and approved. On motion by Mr. Robertson, seconded by Mr. Lamb, the Secretary was instructed to cast an electing vote for the parties whose names were proposed at those meetings. New applicants for membership were: C. H. Woodward, 4129 Ingalls St., San Diego, by A. M. Ingersoll; John Hornung, 5219 Wilton Place, Los Angeles, by L. E. Wyman; Mrs. Dudley Baird, 2434 Prospect St., Berkeley; J. Jackson Goodrich, R.F.D. 2, Box 82, Compton; Mrs. Katherine A. Wanser, 4102 Brooklyn Ave., Seattle, Wash.; and William V. Evans, Livingston, Mont., by W. Lee Chambers; Miss Caroline B. Potter, 1314 Alice St., Oakland, by Tracy I. Storer; and Ridley Holleman, 205 Duffield St., San Antonio, Texas, by O. P. Silliman.

Mr. Chambers, as custodian of the Chambliss Library, submitted a report showing titles and number of books in that library. Mr. Robertson moved that this report be accepted, and that the Secretary be instructed to request the Editor of THE CONDOR to publish same at an early date. Motion seconded by Judge Wall. Carried.

Formal business closed, the members indulged in the usual hour of general discussion, and inspection of a tray of hummingbird skins. Adjourned.—L. E. WYMAN, *Secretary*.

CATALOGUE OF THE CHAMBLISS LIBRARY, PROPERTY OF SOUTHERN DIVISION, COOPER ORNITHOLOGICAL CLUB

The Auk, vols. 1 to 18, 1884-1901, incl.
A-Birding on A Bronco, Florence A. Merriam, 1896.
American Ornithology (4 vols., complete), Wilson and Bonaparte, 1831.
American Ornithology (3 vols., complete), Wilson and Bonaparte 1832.

Among the Waterfowl, Job, 1902.
 Bird Studies, Scott, 1898.
 Bird Craft, Mabel Osgood Wright, 1897.
 Birds of Ontario (2nd ed.), McIlwraith, 1894.
 Birds of New England (10th ed.), Samuels, 1883.
 Bird Notes Afield, Keeler, 1899.
 Birds of North and Middle America (part 1), Ridgway, 1901.
 Birds of the United States, Apgar, 1898.
 Birds of Village and Field, Florence A. Merriam.
 Bird Life, Chapman, 1898.
 The Bird, Michelet, 1869.
 Birds and All Nature, vols. 1 to 5, 1896-1899, incl.
 Birds That Hunt and Are Hunted, Blanchan, 1899.
 British Game Birds and Wild Fowl (2 vols.), Morris, 1897.
 Bird Homes, Dugmore, 1900.
 Birds of America, vols. 1 to 7, Audubon, 1840-1844.
 Bird Neighbors, Blanchan, 1897.
 Birds of Kansas, Goss, 1891.
 Birds of Song and Story, E. and J. Grinnell, 1901.
 Bird-Land Echoes, Abbott, 1896.
 Citizen Bird, Mabel Osgood Wright & Elliott Coues, 1898.
 Dictionary of Birds, Newton, 1893-96.
 Explorations and Surveys for a Railroad Route from the Mississippi River to the Pacific Coast, vols. 1 to 13, incl., 1853-55.
 Game Birds of North America (2nd ed.), Elliot, 1897.
 Game Birds at Home, Van Dyke.
 Geological Survey of California, vol. 1, Land Birds, Cooper, 1870.
 Hawks and Owls of the United States, Fisher, 1892.
 Key to North American Birds (revised edition), Coues, 1894.
 Life Histories N. A. Birds (2 vols.), Bendire, 1892-95.
 Land Birds and Game Birds of New England (2nd edition), Minot, 1895.
 Lost and Vanishing Birds, Dixon, 1898.
 Little Brothers of the Air, Olive Thorne Miller, 1892.
 Mind in Nature (Origin of Life and the Mode of Development of Animals).
 Methods in the Art of Taxidermy, Davie, 1894.
 Natural History of Selborne, White, 2 vols. 1895.
 Natural History of Selborne, White, 2 vols. 1895.
 Notes on the Birds of Minnesota, Hatch, 1892.
 Nomenclature of Colors, Ridgway, 1886.
 Nuttall's Ornithology, 2 vols., (2 copies), Montague Chamberlain.
 New England Bird Life, Coues, 1885.
 Nests and Eggs of North American Birds (5th edition), Davie, 1898.
 North American Birds, vols. 1-3, 1874, vols. 1-2, 1884, Baird, Brewer, and Ridgway.
 Naturalist's Directory, 1884.
 Our Native Birds of Song and Beauty (2 vols.), Nehrling, 1893.
 The Osprey, vols. 1 to 4, incl.
 Our Own Birds, Bally.
 Poems of Nature, W. C. Bryant, 1893.
 Review of the Birds of Connecticut, Merriam.
 Some Common Birds, Silloway, 1897.
 Taxidermy and Zoological Collecting, Hornaday.
 The Lost Robin, Wetherald, 1907.

The History of Birds, Bingley.
 Upon the Tree Tops, Miller, 1897.
 The Woodpeckers, Eckstorm, 1901.
 Wild Fowl of North America, Elliot, 1898.
 North American Shore Birds (2nd edition), Elliot, 1895.
 Wilson's American Ornithology, Wilson, vols. 1 and 2, Ord, 1828.
 Books of Plates, Wilson's American Ornithology, 1829.
 Walden, Thoreau, 1897.
 Wild Animals I Have Met, Seymour, 1901.
 Wood's Natural History.
 Manual of North American Birds (2nd edition), Ridgway, 1896.

AUGUST 26, 1920.—Regular monthly meeting of the Southern Division, Cooper Ornithological Club, was held at the Museum of History, Science and Art, at 8:00 P. M. Vice-President Rich officiated, with others present as follows: Mesdames Terry and Law; Messrs. Colburn, Cookman, Hanaford, Hornung, King, Lamb, Law, Nokes, L. Peyton, S. Peyton, Robertson, van Rossem and Wyman. Visitors were Mrs. Nokes, Mrs. Rich, Dr. Terry and Mr. Burn.

Minutes of the July meeting were read and approved, and those of the Northern Division for July and August were read. Applicants whose names had been presented at previous meetings were declared elected, on motion by Mr. Robertson that the Secretary be instructed to cast an electing vote. New presentations were: Ashley M. Walker, 572 Islay St., San Luis Obispo, by O. P. Silliman; Ray B. Lyon, Paso Robles, by Chase Littlejohn; Mrs. Jane F. Easton, La Jolla; Clarence L. Suits, Eagle Rock; and Harold E. Meyers, Medina, N. Y., by W. Lee Chambers; L. A. Elmore, Berkeley, by Mr. Swarth (presented by the Northern Division).

A letter from Mr. W. Leon Dawson, renouncing any official connection of the Cooper Club with the Birds of California Publishing Co., was presented; also, a report of the committee appointed by the Northern Division, in April, relative to this matter. Following considerable discussion, Mr. Robertson moved that the action of the Northern Division in adopting the report of this committee be ratified, and that the letter from Mr. Dawson be published in THE CONDOR [see *antea*]. Seconded by Dr. Nokes. Carried.

Inspection of a tray of shore-bird skins, and an account by Mr. Sidney Peyton of recent experiences on Forrester Island, where he spent some weeks with George Willett, completed the evening. Adjourned.
 —L. E. WYMAN, Secretary.

r
.
.
f
.
s
d
l
.
d
.
d
n
l
d
l
e-
e-
e-
r,
P,
y
a
d
ee
r.
l-
e-
e
la
e-
e
is
n,
e
of
t-
E
s.
s,
of
d,
re
d.

For Sale, Exchange and Want Column.—Any Cooper Club member is entitled to one advertising notice in each issue free. Notices of over ten lines will be charged for at the rate of ten cents per line. For this department, address W. LEE CHAMBERS, *Eagle Rock, Los Angeles County, California.*

THE COOPER CLUB has just fallen heir to the following publications which may be of interest to its members. We are quoting them at prices that just about cover trouble and expense of mailing.

The Story of the Farallones, Barlow, 1897 20c
Birds of the Santa Barbara Islands, Grinnell, 1897 50c
Birds of Los Angeles County, Grinnell, 1898 20c
Address W. LEE CHAMBERS, *Business Manager, Eagle Rock, Los Angeles, Calif.*

WANTED.—I will pay cash for Jas. H. McClintock's "History of Arizona".—EARLE R. FORREST, 261 Locust Ave., Washington, Penn.

WANTED.—Nidologist, vol. i, nos. 2, 5, 6. Osprey, vol. i, nos. 2, 4, 6; vol. ii, no. 5; vol. iii, nos. 9, 10; vol. iv, no. 8; vol. v, no. 9, index; vol. i (new series), nos. 4, 5, 7. Ornithologist and Oologist, vol. vi, nos. 5, 7, 8, 9, 10; vol. vii, nos. 15, 16, 20-24; vol. viii, nos. 1, 3, 4, 7, 9, 10, 11. Will purchase at reasonable price.—BENJAMIN ADAMS, Wethersfield, Conn.

SPLENDID OPPORTUNITIES for study and for contact with advanced students are open to young men or women who have mastered the art of skeleton preparation. Those skilled in this work are in constant demand in museums and universities. Our methods are yours for the asking.—J. EUGENE LAW, Curator in Osteology, Museum of Vertebrate Zoology, Berkeley, Calif.

WANTED—Ridgway's "Birds of North and Middle America", vols. 2 and 3; paper covers preferred; must be in good condition. Will pay reasonable cash price.—F. SEYMOUR HERSEY, Taunton, Mass.

WANTED—Will pay cash or exchange for Auk, vol. 5, no. 4; American Ornithology, vol. 6, nos. 1, 2, 3, 4, 6, 7; Ornithologist and Oologist, vols. 6 and 7, complete, vol. 11, nos. 2, 3, 4, 5, 6, 7, 8, 10, 11; vol. 12, nos. 8, 9, 10, 11; Maynard's Birds of Eastern North America; McIlwraith's Birds of Ontario, 2nd edition.—H. H. JOHNSON, Pittsfield, Maine.

WANTED—North American Fauna, nos. 4, 5, 7, 16, 17, 19, 20, 21, 25, 27, 28, 30. For any of these I will pay a reasonable price.—ALEX. WALKER, Blaine, Oregon.

I want odd volumes of Proceedings of the Biological Society of Washington.—W. LEE CHAMBERS, *Eagle Rock, Los Angeles, Calif.*

CENTRAL AMERICAN BIRD SKINS—I will be pleased to correspond with anyone who might be interested in general collections from Guatemala and Costa Rica, and later on from Panama. The quality of this material cannot be surpassed.—AUSTIN P. SMITH, care of American Consulate, San Jose, Costa Rica.

AUKS WANTED—I have a nearly complete set, but lack the first two volumes, 1884 and 1885. Also Jack Bulletin Nuttall Ornithological Club, vol. 1, no. 2; vol. 2, no. 3. If you have any of the above to spare, please let me know about it. R. C. MCGREGOR, Bureau of Science, Manila, P. I.

MEETINGS OF THE COOPER ORNITHOLOGICAL CLUB

Northern Division: 8 P. M., fourth Thursday of month, at Museum of Vertebrate Zoology, University of California, Berkeley. Take any train or car to University Campus. The Museum is the corrugated iron building on south side of campus just north of football bleachers.—MRS. AMELIA S. ALLEN, Sec'y, 37 Mosswood Road, Berkeley, Calif.

Southern Division: 8 P. M., last Thursday of month, at Museum of History, Science, and Art, Exposition Park, Los Angeles. Take "University" car south on Spring St., or "Vermont and Georgia" south on Hill. Get off at Vermont and Thirtieth, and walk two blocks east to Exposition Park. The Museum is the building with the large dome.—L. E. WYMAN, Sec'y, care of Museum.

Intermountain Chapter: Get date and place from the Sec'y, ASHBY D. BOYLE, 351 5th Ave., Salt Lake City, Utah.

San Bernardino Chapter: Get date and place from the Sec'y, M. FRENCH GILMAN, Banning, Calif.

